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# ***Adolescent Births: A Statistical Profile***

## ***Massachusetts 2000***

**Supplement to Massachusetts Births 2000**

***Massachusetts Department of Public Health  
Bureau of Family and Community Health, Office of Statistics and Evaluation  
Bureau of Health Statistics, Research and Evaluation***

***March 2002***

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***Massachusetts  
2000***

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# Executive Summary

## ***Introduction***

*Adolescent Births: A Statistical Profile, Massachusetts, 2000* is a supplement to the publication *Massachusetts Births 2000*. It presents selected annual statistics and trend data on births among adolescent women in Massachusetts, as well as comparisons with national data. The four sections cover: 1) demographic and birth characteristics and teen birth trends for the state as a whole; 2) birth outcomes and prenatal care including birthweight, gestational age, adequacy of prenatal care, and infant mortality; 3) teen birth rates and birth characteristics for each of the 25 communities with the highest number of teen births in 2000; and 4) teen birth characteristics for each of the 351 Massachusetts communities and for each of the 27 Community Health Network Areas (CHNAs). Teen births refer to births to resident Massachusetts women under 20 years old, unless specified otherwise. Massachusetts data are from the Registry of Vital Records and Statistics, Bureau of Health Statistics, Research and Evaluation, Massachusetts Department of Public Health (MDPH). United States data are from the Centers for Disease Control and Prevention, National Center for Health Statistics (NCHS).

Overall, Massachusetts continues to have a low birth rate among women ages 15-19 years relative to most other states and the nation as a whole, ranking 3<sup>rd</sup> lowest in 2000 behind New Hampshire and Vermont.<sup>1</sup> Nevertheless, some Massachusetts communities have teen birth rates that are higher than the national rate. Moreover, there are still disparities across race/Hispanic ethnicity subgroups in relation to low birthweight prevalence, adequacy of prenatal care and infant mortality. The data in this profile are intended to present information that will assist those planning programs, provide evaluators and researchers with reference measures, and assist policy makers in their efforts to address adolescent health issues.

## ***Summary of Key Findings***

- ✓ The teen birth rate is the lowest in three decades.
- ✓ The Massachusetts teen birth rate remains considerably lower than the U. S. rate.
- ✓ There continue to be Massachusetts communities that require special attention.
- ✓ Overall, teen mothers had more adverse birth outcomes (higher rates of low birthweight and infant mortality) than adult women, reflecting an increased risk associated with adolescent maternity.

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<sup>1</sup> Martin, JA, Hamilton, BE, Ventura, SJ, Menacker, F, Park, MM, Births: Final Data for 2000. National Vital Statistics Report. Centers for Disease Control. February 12, 2002, 50 (5).

## **KEY FINDINGS: 2000**

### **Teen Birth Counts, Rates and Trends**

#### **Number and Percentage of Births to Women under Age 20**

- ✓ In 2000, the total number of infants born to women under 20 was 5,395, a decrease of 193 births from 1999. Of all resident births, 6.6% were to women under 20. Both the number and the percentage of births to teens are the lowest in decades.
- ✓ Since 1985, the decline in the percentage of teen births was greater in Massachusetts than in the United States (U.S.). In Massachusetts, the decline was 22.4% (from 8.5% to 6.6%) compared to the U.S. decline of 7.1% (from 12.7% to 11.8%).

#### **Birth Rates among Women Ages 15-19<sup>2</sup>**

- ✓ In 2000, the Massachusetts birth rate to women ages 15-19 was 25.8 per 1,000 females, the lowest rate in three decades. Massachusetts' teen birth rate was 46.8% lower than the national teen birth rate (48.5).
- ✓ From 1990 to 2000, teen birth rates declined among all race/Hispanic ethnicity groups. The teen birth rates declined the most among black non-Hispanics (44.2%), followed by Asians (38.8%), white non-Hispanics (35.8%), and Hispanics (27.8%).
- ✓ Among the 25 Massachusetts communities with the highest number of births in 2000, the five communities with the highest teen birth rates in 2000 were Lawrence (97.6 births per 1,000 Lawrence women ages 15-19 years), Holyoke (87.9), Chelsea (80.8), Springfield (77.2), and Southbridge (68.3).

#### **Age Distribution of Teen Mothers**

- ✓ In 2000, 66.1% of all teen births were to women aged 18-19, 32.2% to women ages 15-17 years, and 1.7% to women under age 15. Since 1995, the number of births in each teen age group has declined.

#### **Distribution of Teen Births by Race/Hispanic Ethnicity**

- ✓ From 1995 to 2000, the proportion of white non-Hispanic births born to teen mothers decreased by 11.8%, and the proportion of black non-Hispanic births to teens dropped 9.9%. However, the proportion of Hispanic births to teen women increased by 15.5%.

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<sup>2</sup> 2000 birth rates are calculated using MDPH 2000 population estimates, based on U.S. Census 2000 population counts. (see Technical Notes for further explanation).

- ✓ The proportion of teen births to 18-19 year olds was highest among white non-Hispanics (71.4%) and lowest among Hispanic teens (58.6%).

## **Characteristics of Teen Mothers**

### **Mother's Place of Birth**

- ✓ In 2000, just over three-fourths of teen (76.3%) and adult (76.3%) births were to women who were born in the U.S. or the District of Columbia. Compared to adult women (aged 20 or older), a higher proportion of teen births was to mothers born in Puerto Rico or other U.S. territories (2.3% and 9.2% respectively). Among births to adult mothers, 21.3% were to foreign-born mothers, compared to 14.4% of teen births.

### **Previous Live Births (Parity)**

- ✓ In 2000, 83.4% of teen births were to first time mothers. 13.9% of teen births were to mothers with one prior live birth and 2.7% of teen births were to mothers with two or more prior live births. The percentage of births to teen mothers with prior children remained stable between 1999 (16.3%) and 2000 (16.6%).
- ✓ Among the 25 communities with the greatest number of teen births, the percentages of births among teens who had at least one previous live birth were highest in Holyoke (28.3%), Methuen (27.3%), Springfield (23.5%), Leominster (23.4%), and Southbridge (23.1%).

### **Marital Status**

- ✓ In 2000, 91.3% of teen births were to mothers who were unmarried, compared to 21.9% of births to adult mothers. There was less variation in marital status by race/Hispanic ethnicity among births to teen mothers than among births to adult mothers. The percentage of teen births to unmarried mothers was higher than the U.S. as a whole, where 79.0% of teen births were to unmarried mothers.

### **In-Hospital Paternity Acknowledgment**

- ✓ In 2000, paternity acknowledgement of births to unmarried teens was 68.6% compared to 72.7% of births to unmarried adult mothers. From 1995 to 2000, paternity acknowledgement of births to unmarried teen mothers increased more (26.6%: from 54.2% to 68.6%) than paternity acknowledgement of births to unmarried adult mothers (20.8%: from 60.2% to 72.7%).
- ✓ Among the 25 communities with the greatest number of teen births, Quincy had the lowest percentage of births to unmarried teen mothers with acknowledged paternity (52.8%). Boston (56.7%), Brockton (56.9%), Taunton (58.3%), and Pittsfield (58.9%) also had relatively low percentages of in-hospital paternity acknowledgment.



## **Smoking during Pregnancy**

- ✓ In 2000, 19.0% of births were to teen mothers who smoked during pregnancy compared to 9.1% of births to adult mothers, a six-year low in the percentage of maternal smoking for both groups.
- ✓ The percentage of teen births to mothers who reported smoking during pregnancy was over three times higher among white non-Hispanics (29.6%) than among black non-Hispanics (9.6%), Hispanics (9.6%), or Asians (7.9%).

## **Expected Educational Attainment**

- ✓ In 2000, 32.1% of teen births were to mothers who were behind their expected grade level, up from 31.7% in 1999. The percentage varied by race/Hispanic ethnicity: 38.6% of Hispanic teen births, 30.3% of white non-Hispanic teen births, and 24.1% of black non-Hispanic teen births were to mothers who were behind their expected grade level.
- ✓ Among the 25 communities with the greatest number of teen births, the percentages of teen mothers who were one or more school grades behind were highest in Chicopee (48.3%), Somerville (45.7%), Holyoke (45.7%), Marlborough (44.4%), and Lynn (41.2%).

## **Prenatal Care**

### **Prenatal Care Payment Source**

- ✓ In 2000, 73.3% of teen births were to mothers who had prenatal care supported through public funds, in contrast to 23.3% of births to women aged 20 or older. Among teen births, the percentage of mothers receiving publicly funded prenatal care varied by race/Hispanic ethnicity: 85.8% of Hispanic teen births, 82.2% of black non-Hispanic teen births, 76.0% of Asian teen births, and 61.8% of white non-Hispanic teen births.

### **Adequacy of Prenatal Care**

- ✓ In 2000, 60.7% of teen births were to mothers who received adequate prenatal care (using the Kessner Index) compared to 80.4% of births to adult mothers. Among teen births, white non-Hispanic teens had the highest percentage of adequate care (64.4%) followed by Hispanic (59.8%), and black non-Hispanic (55.9%) teens. Only 37.1% of Asian teen births were to mothers who had adequate prenatal care.
- ✓ Among the 25 communities with the greatest number of teen births, the five communities with the lowest percentages of adequate prenatal care for teen mothers were Revere (28.6%), Pittsfield (44.8%), Chelsea (45.1%), Lynn (49.0%), and Springfield (50.6%).

## **Other Birth Characteristics**

### **Breastfeeding**

- ✓ In 2000, 58.2% of teen births were to mothers who reported an intention to breastfeed compared to 74.9% of births to adult mothers. Since 1995, there has been a 22.5% increase in the percentage of teen births to mothers who intend to breastfeed (from 47.5% in 1995 to 58.2% in 2000).

### **Cesarean Sections**

- ✓ In 2000, the percentage of teen births delivered by Cesarean section remained lower than the percentage of Cesarean births to adult mothers (13.8% vs. 24.1% respectively). From 1999 to 2000, the percentage of Cesarean deliveries increased from 12.8% to 13.8% among teen mothers and from 23.1% to 24.1% among adult mothers.

## **Teen Birth Outcomes**

### **Low Birthweight and Preterm Delivery**

- ✓ In 2000, low birthweight births (less than 2,500 grams or 5.5 pounds) were more common among teen mothers (9.3%) than adult mothers (7.0%). The percentage of low birthweight births was highest among black non-Hispanic teens (12.6%) followed by Asians (10.2%) and Hispanics (9.8%), and was lowest among white non-Hispanic teens (7.7%).
- ✓ Among the 25 communities with the greatest number of teen births, the five communities with the highest percentages of low birthweight teen births were Marlborough (16.7%), Brockton (14.7%), Lynn (12.9%), New Bedford (12.9%), and Springfield (12.2%).
- ✓ The percentage of preterm births (births <37 weeks gestation) was somewhat higher among teen births than among births to older women (8.9% vs. 8.0%). The highest percentage of preterm births to teens was to black non-Hispanic teens (11.6%) and lowest to white non-Hispanic teens (7.7%).

### **Infant Mortality<sup>3</sup>**

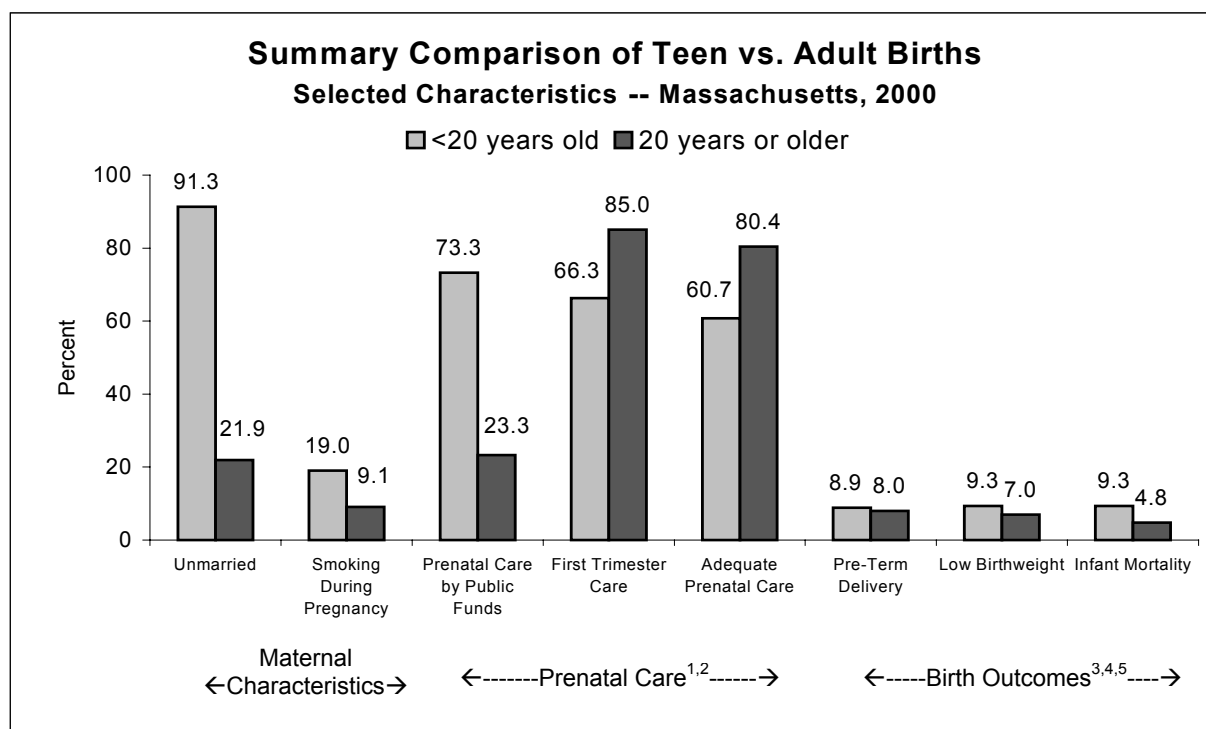
- ✓ Among the 5,588 births to teen mothers in 1999, 52 infants died before their first birthday for an infant mortality rate (IMR) of 9.3 per 1,000 live teen births. Since 1997, when the IMR for teen mothers reached a low of 6.9, there has been a 34.8% increase in the teen IMR. The increase

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<sup>3</sup> The infant mortality rate for this report is calculated using the linked birth/infant death file which matches births in a particular year (e.g., 1999) to infants who died before their first birthday. These infants may have died in the same year or the year following their birth. Therefore, maternal age-specific infant mortality rates do not match overall infant mortality rates for a particular year since those rates are based on the total number of infants who died in a particular calendar year, regardless of their year of birth.

has occurred in both neonatal (<28 days after birth) and postneonatal (28-364 days after births) deaths.

- ✓ As in previous years, the IMR for infants born in 1999 to teen mothers was higher than the rate for infants of adult mothers: 9.3 deaths per 1,000 live teen births compared to 4.8 deaths per 1,000 live adult births.
- ✓ In 1999, the IMR was higher among teen mothers than among adult mothers for all race/Hispanic ethnicity groups.



Source: Registry of Vital Records and Statistics, MDPH: 2002.

<sup>1</sup>Public: Mass Health (Medicaid), Medicare, Healthy Start, free care and other government programs (see Technical Notes). <sup>2</sup>Adequacy of Prenatal Care (based on the Kessner Index) is determined by a calculation that combines trimester of prenatal care registration with the number of prenatal care visits and adjusts for gestational age (see Glossary and Technical Notes for further explanation). <sup>3</sup>Preterm birth (< 37 weeks gestation) as measured by the clinical estimate of the number of weeks of pregnancy completed. (see Technical Notes for further explanation).

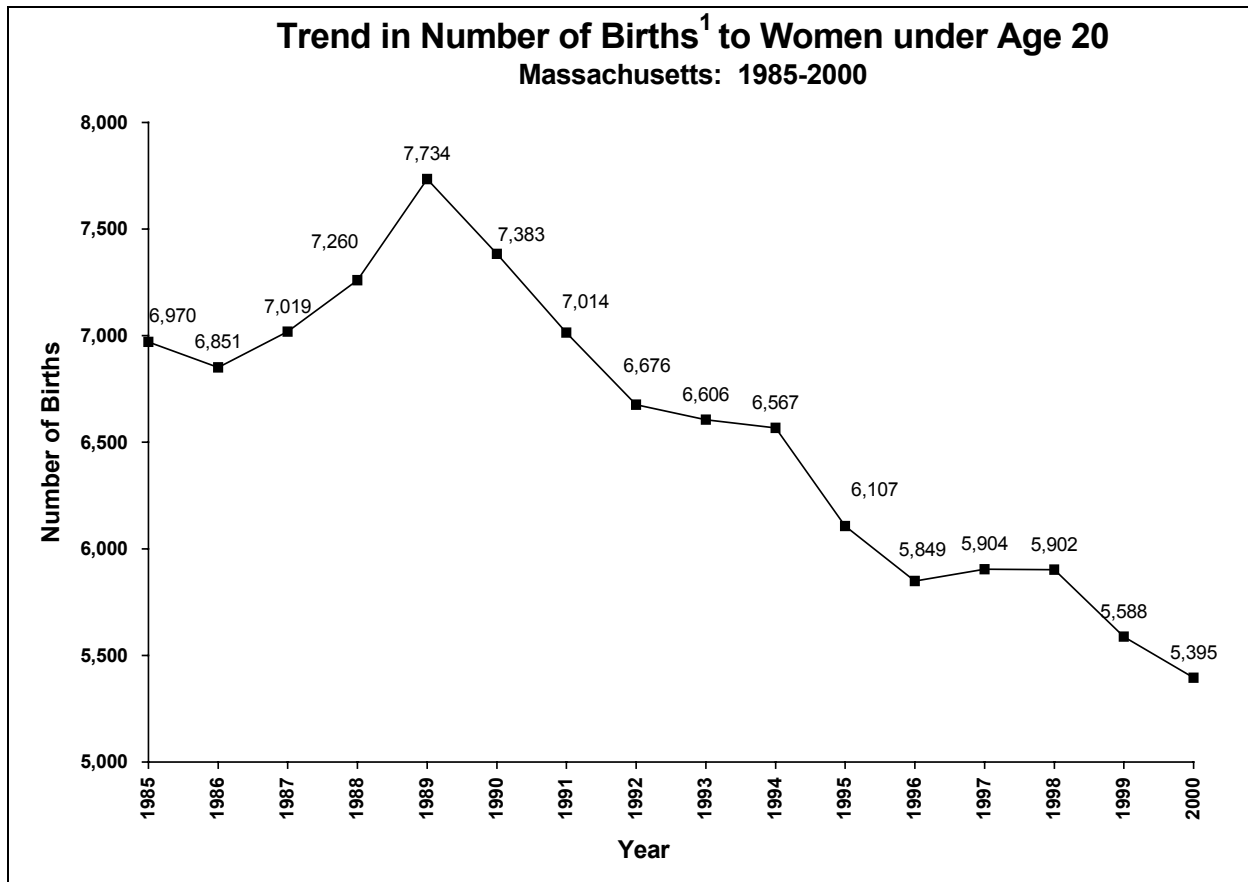
<sup>4</sup>Low birthweight: <2,500 grams or 5.5 pounds. <sup>5</sup>Infant Mortality: death up to 364 days after birth.

*I.*

*Demographic  
and Birth  
Characteristics*



**Figure 1.**

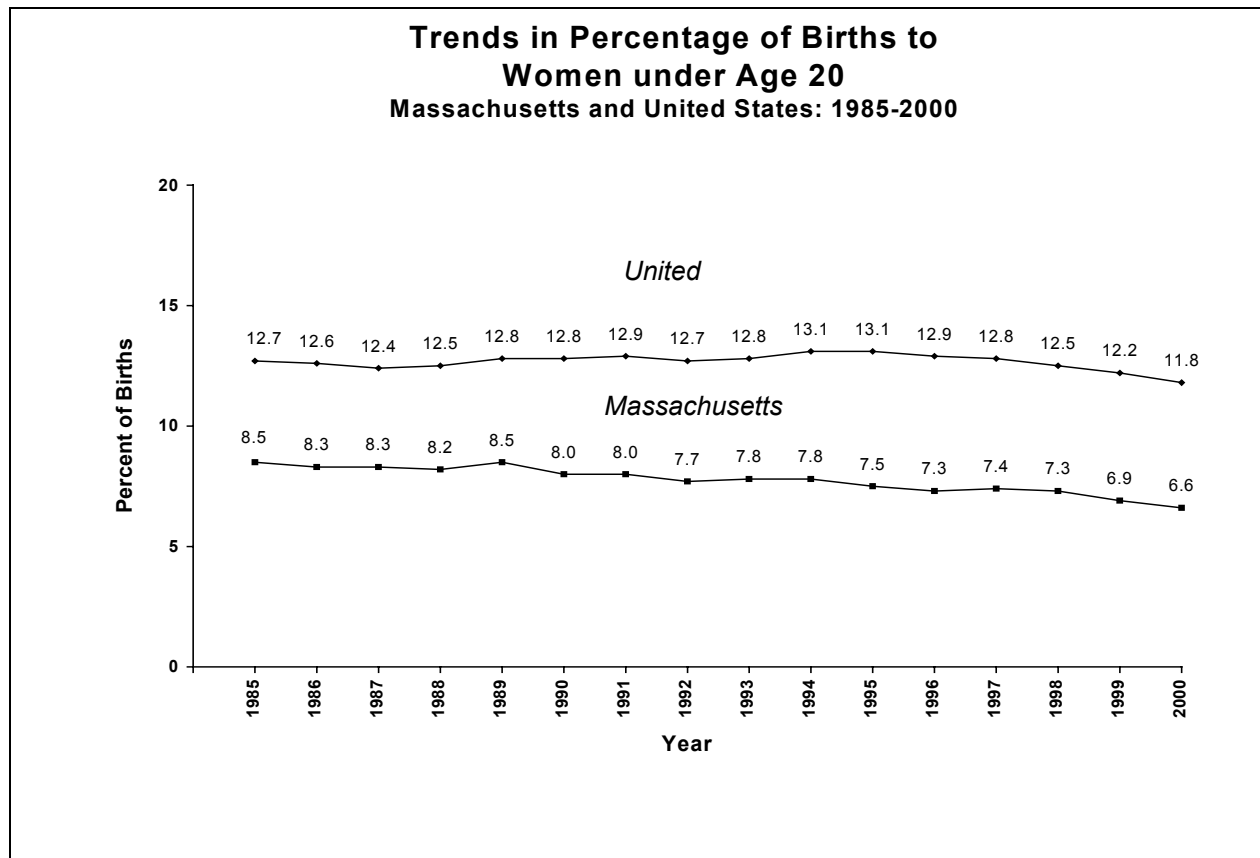


Source: Registry of Vital Records and Statistics, MDPH, 2002.

<sup>1</sup> Live births to Massachusetts residents.

- In 2000, 5,395 infants were born to women under age 20, a decrease of 193 births from the previous year.
- Since peaking in 1989, the number of births to teens has declined by 30.2% from 7,734 to 5,395.

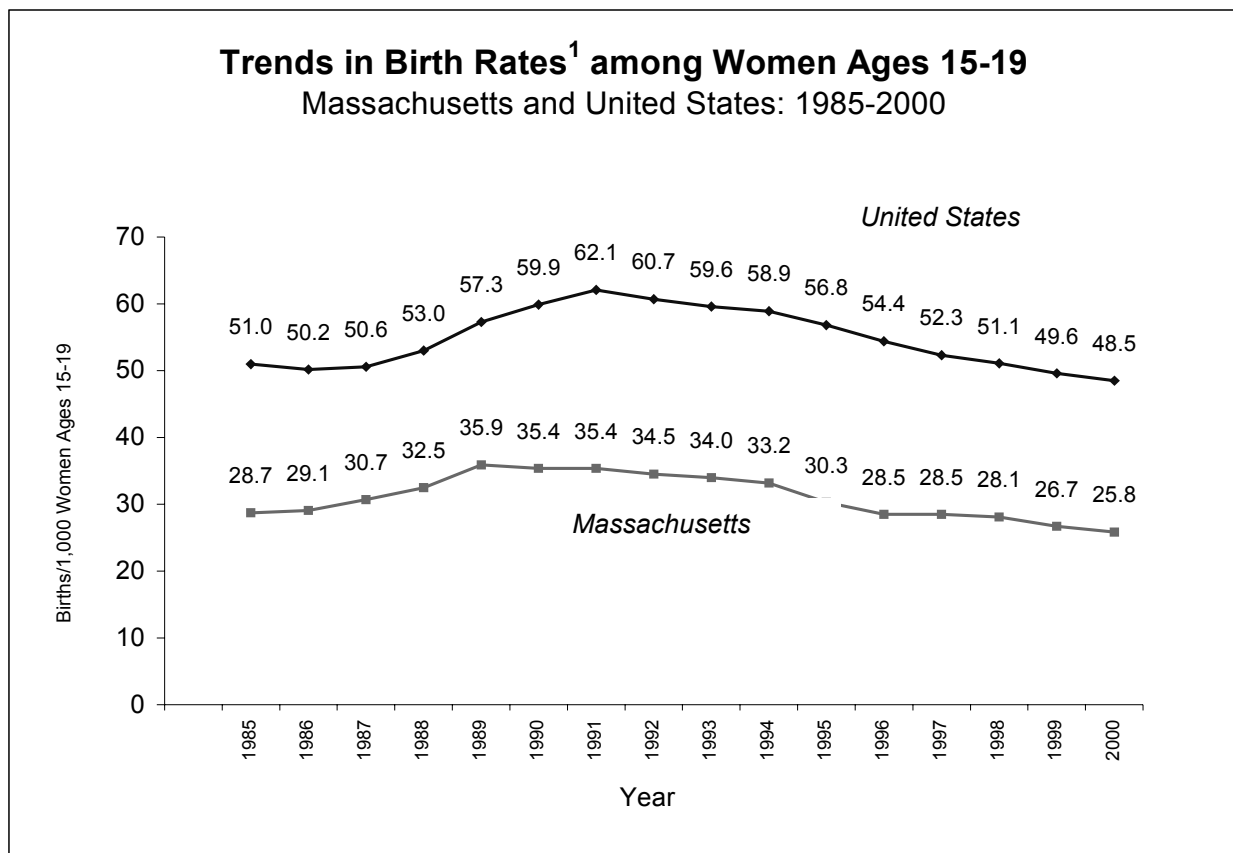
**Figure 2.**



Sources: Registry of Vital Records and Statistics, MDPH, 2002; National Center for Health Statistics (NCHS), 2002.

- In 2000, 6.6% of all resident births in Massachusetts were to women under age 20, compared with 8.5% in 1985.
- Since 1985, the decline in the percentage of teen births was greater in Massachusetts than in the United States (U.S.). In Massachusetts, the decline was 22.4% (from 8.5% to 6.6%) compared to the U.S. decline of 7.1% (from 12.7% to 11.8%).
- In 2000, the national percentage of births that were to teen mothers continued to be higher (11.8% in 2000) than the percentage in Massachusetts (6.6% respectively).

**Figure 3.**



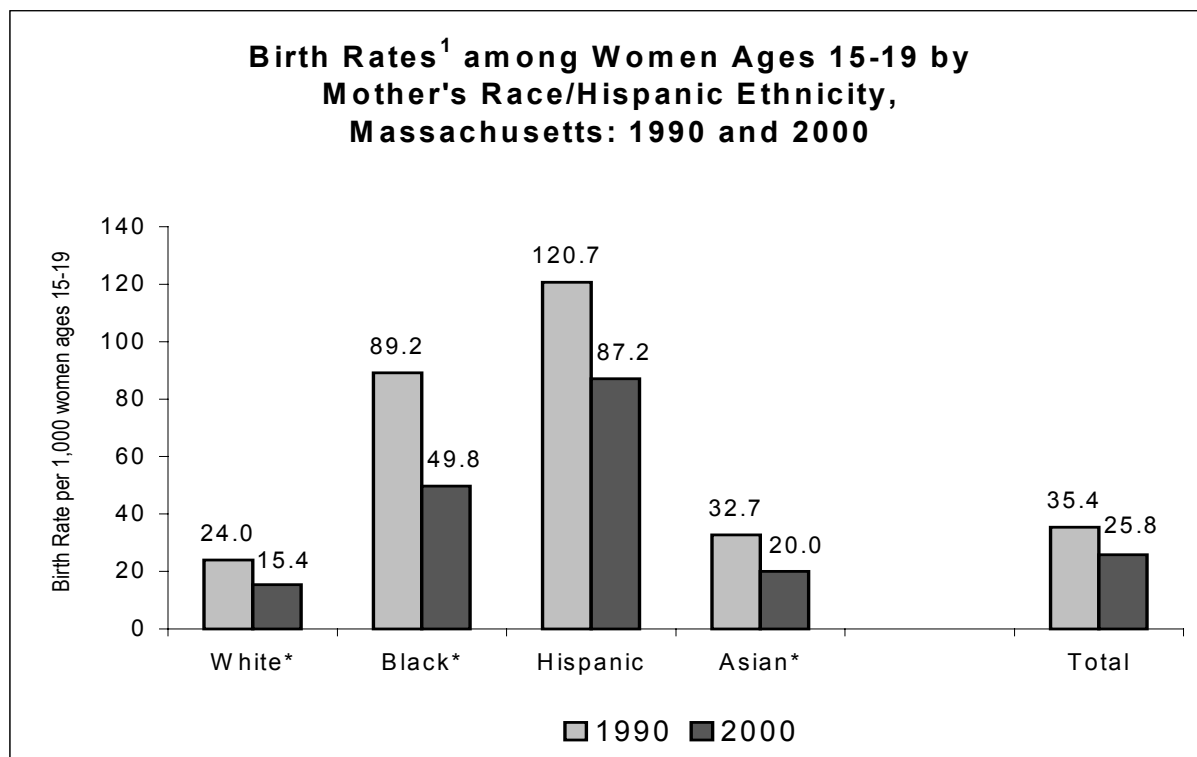
Sources: Registry of Vital Records and Statistics, MDPH, 2002; National Center for Health Statistics (NCHS), 2002.

<sup>1</sup> Number of births per 1,000 women ages 15-19. 2000 birth rates are calculated using MDPH 2000 population estimates, based on U.S. Census 2000 population counts. 1999 rates are re-calculated using the 1999 MDPH Massachusetts population estimates (see Technical Notes for further explanation). Population estimates for prior years are based on estimates from the Massachusetts Institute for Social and Economic Research. Please note: differences between these rates and previously published data reflect updates in population estimates.

- In 2000, the Massachusetts teen birth rate was 25.8 births per 1,000 women ages 15-19, the lowest teen birth rate recorded since 1970 (39.1).
- In 2000, the Massachusetts teen birth rate was 46.8% lower than the national teen birth rate (25.8 vs. 48.5, respectively).



**Figure 4.**



Sources: Registry of Vital Records and Statistics, MDPH: 1990, 2000.

\* Non-Hispanic

<sup>1</sup> Births per 1,000 women ages 15-19. 2000 birth rates are calculated using MDPH 2000 population estimates, based on U.S. Census 2000 population counts. (See Technical Notes for further explanation).

- Between 1990 and 2000 the overall teen birth rate among women ages 15-19 declined 27.1%, from 35.4 to 25.8.
- From 1990 to 2000, teen birth rates declined among all race/Hispanic ethnicity groups. The teen birth rates declined the most among black non-Hispanics (44.2%), followed by Asians (38.8%), white non-Hispanics (35.8%), and Hispanics (27.8%).

**Table 1.**  
**Trends in Teen Births by Mother's Age, Massachusetts: 1995-2000**

Mother's Age	1995		1996		1997		1998		1999		2000	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>12-19</b>	6,107	100.0	5,849	100.0	5,904	100.0	5,902	100.0	5,588	100.0	5,395	100.00
<b>12-13</b>	19	0.4	11	0.2	19	0.3	14	0.2	10	0.2	12	0.2
<b>14</b>	98	2.0	80	1.4	84	1.4	65	1.1	63	1.1	78	1.4
<b>15</b>	356	5.6	342	5.8	290	4.9	271	4.6	244	4.4	211	3.9
<b>16</b>	721	12.5	687	11.7	694	11.8	663	11.2	570	10.2	502	9.3
<b>17</b>	1,203	18.9	1,115	19.1	1,121	19.0	1,120	19.0	1,039	18.6	1,026	19.0
<b>18</b>	1,648	26.8	1,666	28.5	1,613	27.3	1,710	29.0	1,679	30.0	1,544	28.6
<b>19</b>	2,062	33.8	1,948	33.3	2,083	35.3	2,059	34.9	1,983	35.5	2,022	37.5

Source: Registry of Vital Records and Statistics, MDPH: 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

- In 2000, 66.1% of all teen births were to women aged 18 or 19 years old, 32.2% to women aged 15-17 years, and 1.6% to women under age 15.
- There has been a steady decline in the proportion of births to teen women under 18 years old. From 1995 to 2000, the percentage of teen births to mothers less than 18 years old declined from 39.4% to 33.9%.
- Among the age groupings (12-14, 15-17 and 18-19) from 1999 to 2000, births to teen mothers less than 15 years old increased by 17 births from 73 to 90 births. There was a decrease of 114 births among women aged 15-17. The number of births to teens aged 18-19 dropped by 96 births; however, all of the decline was among 18 year olds, while the number of births to 19 year olds increased slightly.

**Table 2.**  
**Trends in Teen Births<sup>1</sup> by Mother's Race/Hispanic Ethnicity, Massachusetts: 1995-2000**

Mother's Race/Ethnicity	1995		1996		1997		1998		1999		2000	
	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>
<b>Total</b>	6,107	100.0	5,849	100.0	5,904	100.0	5,902	100.0	5,588	100.0	5,395	100.0
<b>White*</b>	3,209	52.5	2,952	50.5	2,865	48.5	2,953	50.0	2,686	48.1	2,500	46.3
<b>Black*</b>	865	14.2	810	13.8	794	13.4	745	12.6	719	12.9	690	12.8
<b>Hispanic</b>	1,727	28.3	1,722	29.4	1,807	30.6	1,775	30.1	1,746	31.2	1,765	32.7
<b>Asian*</b>	163	2.7	164	2.8	214	3.6	185	3.1	215	3.8	217	4.0
<b>Other*</b>	134	2.2	155	2.7	205	3.5	239	4.0	218	3.9	215	4.0
<b>Unknown</b>	9	0.1	46	0.8	19	0.3	5	0.1	4	**	8	0.1

Source: Registry of Vital Records and Statistics, MDPH: 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\* Non-Hispanic \*\* Calculations based on 1-4 events are excluded.

<sup>1</sup> Births to women < 20 years old.

<sup>2</sup> Percentages are based on column totals.

- In 2000, the percentage of teen births that were to white non-Hispanic teens continued to decrease. However, they continue to account for almost half (46.3%) of all teen births in Massachusetts. Between 1995 and 2000, the number of teen births to white non-Hispanic mothers decreased by 22.1% (from 3,209 to 2,500).
- From 1995 to 2000, the percentage of infants born to white non-Hispanic teen mothers declined by 11.8% (from 52.5% to 46.3%), and to black non-Hispanic teen mothers by 9.9% (from 14.2% to 12.8%). During the same period, the proportion of infants born to Hispanic teen women increased by 15.5% (from 28.3% to 32.7%).
- Asian mothers continue to account for a small, but growing percentage of all teen births (4.0% in 2000).

**Table 3.**  
**Teen Births by Mother's Age and Race/Hispanic Ethnicity, Massachusetts: 2000**

Mother's Age	White*		Black*		Hispanic		Asian*		Other*		Unknown		Total	
	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>
< 20	2,500	100.0	690	100.0	1,765	100.0	217	100.0	215	100.0	8	100.0	5,395	100.0
18-19	1,786	71.4	453	65.7	1,035	58.6	132	60.8	152	70.7	8	100.0	3,566	66.1
16-17	635	25.4	188	27.2	584	33.1	68	31.3	53	24.7	0	0.0	1,528	28.3
12-15	79	3.2	49	7.1	146	8.3	17	7.8	10	4.7	0	0.0	301	5.6

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\* Non-Hispanic

<sup>1</sup> Percentages are based on column totals. Percentages may not add up to 100 due to rounding.

- The proportion of teen births to 18-19 year olds was highest among white non-Hispanics (71.4%), followed by black non-Hispanics (65.7%), Asians (60.8%), and Hispanics (58.6%).
- Hispanics had the highest percentage (8.3%) of births to the youngest teens (aged 12-15), followed by Asians (7.8%).

**Table 4.**  
**Births by Mother's Ethnicity and Age, Massachusetts: 2000**

Mother's Ethnicity	Under 20 Years		20 Years or Older		All Ages	
	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>3</sup>
Massachusetts	5,395	100.0	76,183	100.0	81,582	100.0
Puerto Rican	1,221	27.0	3,299	73.0	4,520	5.5
Dominican	230	14.1	1,402	85.9	1,632	2.0
Salvadoran	72	9.8	664	90.2	736	0.9
Other Central American	87	11.3	684	88.7	771	0.9
Other Hispanic <sup>4</sup>	155	9.8	1,433	90.2	1,588	1.9
Chinese	11	0.9	1,282	99.1	1,293	1.6
Vietnamese	35	4.2	790	95.8	825	1.0
Cambodian	113	20.7	433	79.3	546	0.7
Asian Indian	0	0.0	861	100.0	861	1.1
Other Asian/Pacific Islander <sup>5</sup>	63	5.0	1,186	95.0	1,249	1.5
Cape Verdean	117	15.1	656	84.9	773	0.9
Brazilian	78	7.6	955	92.4	1,033	1.3
Other Portuguese	115	8.8	1,198	91.2	1,313	1.6
Haitian	28	2.7	998	97.3	1,026	1.3
West Indian/Caribbean <sup>6</sup>	43	6.6	609	93.4	652	0.8
African American	516	18.4	2,290	81.6	2,806	3.4
African <sup>6</sup>	21	2.4	844	97.6	865	1.1
Middle Eastern <sup>7</sup>	19	2.2	857	97.8	876	1.1
Native American	45	17.7	209	82.3	254	0.3
European	286	2.0	13,682	98.0	13,968	17.1
All others	2,140	4.9	41,851	95.1	43,995	53.9

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

<sup>1</sup> "All Ages" column includes births of unknown age and unknown ethnicity.

<sup>2</sup> Percents are based on row totals. Percentages may not add up to 100 due to rounding.

<sup>3</sup> Percents are based on column totals. Percentages may not add up to 100 due to rounding.

<sup>4</sup> Other Hispanic includes Mexican, Cuban, Colombian, and Other South American.

<sup>5</sup> Other Asian and Pacific Islander includes Korean, Filipino, Japanese, Laotian, Thai, Pakistani and Hawaiian.

<sup>6</sup> West Indian and Caribbean include Jamaican and Barbadian.

<sup>7</sup> African includes Nigerian and other African.

<sup>8</sup> Middle Eastern includes Lebanese, Iranian, and Israeli.

- Puerto Rican women had the highest proportion of births that were to teen mothers (27.0%), followed by Cambodian (20.7%), African-American (18.4%) and Native American (17.7%) mothers.
- Asian Indian women had the lowest proportion of teen births (0.0%), followed by Chinese (0.9%) and European (2.0%) women.

**Table 5.**  
**Births by Mother's Age, Place of Birth, and Ethnicity, Massachusetts: 2000**

Mother's Ethnicity	Mother's Place of Birth											
	Under 20 Years						20 Years and Older					
	U.S. <sup>1</sup>		Puerto Rico <sup>2</sup>		Non-U.S.-Born		U.S. <sup>1</sup>		Puerto Rico <sup>2</sup>		Non-U.S.-Born	
	N	% <sup>3</sup>	N	% <sup>3</sup>	N	% <sup>3</sup>	N	% <sup>3</sup>	N	% <sup>3</sup>	N	% <sup>3</sup>
Massachusetts	4,119	76.3	499	9.2	777	14.4	58,156	76.3	1,763	2.3	16,264	21.3
Puerto Rican	723	59.2	486	39.8	12	1.0	1,564	47.4	1,677	50.8	58	1.8
Dominican	74	32.2	5	2.2	151	65.7	165	11.8	16	1.1	1,221	87.1
Salvadoran	13	18.1	0	0.0	59	81.9	8	1.2	1	**	655	98.6
Other Central Amer.	13	14.9	0	0.0	74	85.1	48	7.0	0	0.0	636	93.0
Other Hispanic <sup>4</sup>	77	49.7	0	0.0	78	50.3	352	24.6	4	**	1,077	75.2
Chinese	4	**	0	0.0	7	63.6	118	9.2	0	0.0	1,164	90.8
Vietnamese	9	25.7	0	0.0	26	74.3	8	1.0	0	0.0	782	99.0
Cambodian	36	31.9	1	**	76	67.3	13	3.0	0	0.0	420	97.0
Asian Indian	0	0.0	0	0.0	0	0.0	19	2.2	0	0.0	842	97.8
Other Asian/Pac. Is. <sup>5</sup>	36	57.1	0	0.0	27	42.9	132	11.1	4	**	1,050	88.5
Cape Verdean	71	60.7	0	0.0	46	39.3	236	36	0	0.0	420	64.0
Brazilian	9	11.5	0	0.0	69	88.5	27	2.8	0	0.0	928	97.2
Other Portuguese	94	81.7	0	0.0	21	18.3	640	53.4	0	0.0	558	46.6
Haitian	7	25.0	0	0.0	21	75.0	41	4.1	1	**	956	95.8
W.Indian/Caribbean <sup>6</sup>	12	27.9	1	**	30	69.8	63	10.3	10	1.6	536	88.0
African American	506	98.1	2	**	8	1.6	2,174	94.9	7	0.3	109	4.8
African <sup>7</sup>	7	33.3	0	0.0	14	66.7	30	3.6	1	**	813	96.3
Middle Eastern <sup>8</sup>	6	31.6	0	0.0	13	68.4	229	26.7	0	0.0	628	73.3
Native American	44	97.8	0	0.0	1	**	198	94.7	1	**	10	4.8
European	267	93.4	1	**	18	6.3	11,592	84.7	4	**	2,086	15.2
All others	2,111	98.6	3	**	26	1.2	40,499	96.8	37	0.1	1,315	3.1

Source: Registry of Vital Records and Statistics, MDPH, 2002.

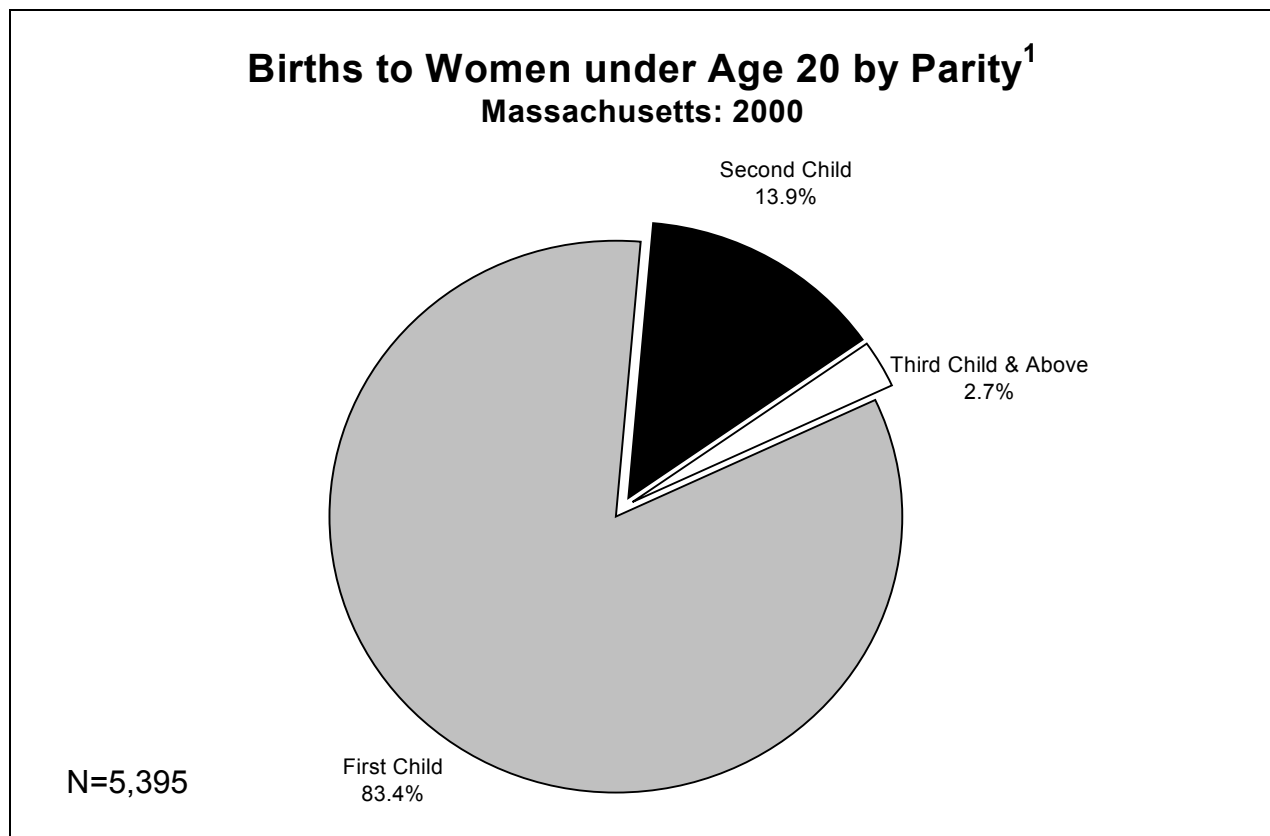
All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\*\* Calculations based on 1-4 events are excluded.

<sup>1</sup>U.S. includes the 50 states and the District of Columbia. <sup>2</sup>Puerto Rico includes Other U.S. territories (the U.S. Virgin Islands and Guam). <sup>3</sup>Percentages are based on known maternal country of origin; percentages are calculated on row totals within each age category. <sup>4</sup>Other Hispanic includes Mexican, Cuban, Colombian, and Other South American. <sup>5</sup>Other Asian and Pacific Islander includes Korean, Filipino, Japanese, Laotian, Thai, Pakistani and Hawaiian. <sup>6</sup>West Indian and Caribbean include Jamaican and Barbadian. <sup>7</sup>African includes Nigerian and other African. <sup>8</sup>Middle Eastern includes Lebanese, Iranian, and Israeli.

- In 2000, just over three-fourths of both teen (76.3%) and adult births (76.3%) were to women who were born in the U.S or the District of Columbia. A higher proportion of teen births were to mothers born in Puerto Rico compared with births to women 20 years or older (9.2% vs. 2.3% respectively). A larger proportion of births was to adult mothers born in another country, 21.3% compared to 14.4% among teens.
- The highest proportion of teen births to women born outside the United States occurred among Brazilians (88.5%) followed by other Central Americans (85.1%) and Salvadorans (81.9%). Among teen births to mothers of Puerto Rican ethnicity, nearly 40% were to women who were born in Puerto Rico.

**Figure 5.**



Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

<sup>1</sup> Parity: The number of live infants ever born to the mother. Parity includes all previous live births as well as the infant named on the birth certificate.

- In 2000, 83.4% of teen births were to first time mothers, 13.9% were to mothers with one prior live birth, and 2.7% of teen births were to mothers with two or more prior live births.
- The percentage of births to teen mothers who had at least one prior live birth remained stable between 1999 (16.3%) and 2000 (16.6%). (1999 data not shown.)

**Table 6.**  
**Births to Multiparous<sup>1</sup> Mothers by Mother's Race/Hispanic Ethnicity and Age**  
**Massachusetts: 2000**

Multiparous Mother's Age	White*		Black*		Hispanic		Asian*		Other*		Unknown		Total	
	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>
<b>All Ages<sup>3</sup></b>	32,728	55.5	3,510	61.1	5,367	58.2	2,259	49.4	774	50.9	130	58.6	44,768	55.8
<b>20 +</b>	32,440	57.5	3,392	67.1	4,974	66.7	2,212	50.7	731	55.9	129	59.2	43,878	58.6
<b>&lt; 20</b>	288	11.6	118	17.1	393	22.3	47	21.8	43	20.2	1	**	890	16.6
<b>18-19</b>	252	14.3	96	21.2	323	31.2	34	26.0	37	24.5	1	**	743	21.0
<b>12-17</b>	36	5.1	22	9.3	70	9.6	13	15.3	6	9.7	0	0.0	147	8.1

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\* Non-Hispanic \*\* Calculations based on 1-4 events are excluded.

<sup>1</sup> Multiparous women have had at least one previous live birth.

<sup>2</sup> Percentage of births to multiparous women.

<sup>3</sup> "All Ages" includes births to mothers of unknown ages.

- In 2000, among women ages 18-19, 31.2% of births to Hispanic women, 26.0% of births to Asian women, 21.2% of births to black non-Hispanic women, and 14.3% of births to white non-Hispanic women were to mothers who already had at least one live birth.
- Among the younger teen mother category (ages 12-17), the percentage of multiparous mothers increased from 7.7% in 1999 to 8.1% in 2000 (1999 data not shown).



**Table 7.**  
**Births by Mother's Race/Hispanic Ethnicity, Age,**  
**and Prenatal Care Payment Source, Massachusetts: 2000**

		Under 20 Years		20 Years or Older		All Ages	
		N	%	N	%	N	%
<b>All Births</b>	Total <sup>1</sup>	5,395	100.0	76,187	100.0	81,582	100.0
	Public <sup>2</sup>	3,955	73.3	17,760	23.3	21,715	26.6
	Private <sup>3</sup>	1,297	24.0	55,008	72.2	56,305	69.0
<b>White*</b>	Total <sup>1</sup>	2,500	100.0	57,551	100.0	60,051	100.0
	Public <sup>2</sup>	1,545	61.8	8,331	14.5	9,876	16.4
	Private <sup>3</sup>	865	34.6	46,406	80.6	47,271	78.7
<b>Black*</b>	Total <sup>1</sup>	690	100.0	5,065	100.0	5,755	100.0
	Public <sup>2</sup>	567	82.2	2,690	53.1	3,262	56.7
	Private <sup>3</sup>	114	16.5	2,243	44.3	2,355	40.9
<b>Hispanic</b>	Total <sup>1</sup>	1,765	100.0	7,482	100.0	9,247	100.0
	Public <sup>2</sup>	1,515	85.8	4,926	65.8	6,455	69.8
	Private <sup>3</sup>	221	12.5	2,394	32.0	2,615	28.3
<b>Asian*</b>	Total <sup>1</sup>	217	100.0	4,450	100.0	4,667	100.0
	Public <sup>2</sup>	165	76.0	1,043	23.4	1,210	25.9
	Private <sup>3</sup>	47	21.7	3,242	72.9	3,287	70.4
<b>Other/ Unknown<sup>4</sup></b>	Total <sup>1</sup>	215	100.0	1,638	100.0	1,536	100.0
	Public <sup>2</sup>	162	75.3	749	45.7	894	58.2
	Private <sup>3</sup>	49	22.8	727	44.4	588	38.3

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\* Non-Hispanic

<sup>1</sup> Percentages are based on race/Hispanic ethnicity totals and age category. Percentages for "Public" and "Private" do not add up to 100 because the total includes "Other" sources (i.e. Workers Compensation, Self-pay, and Other).

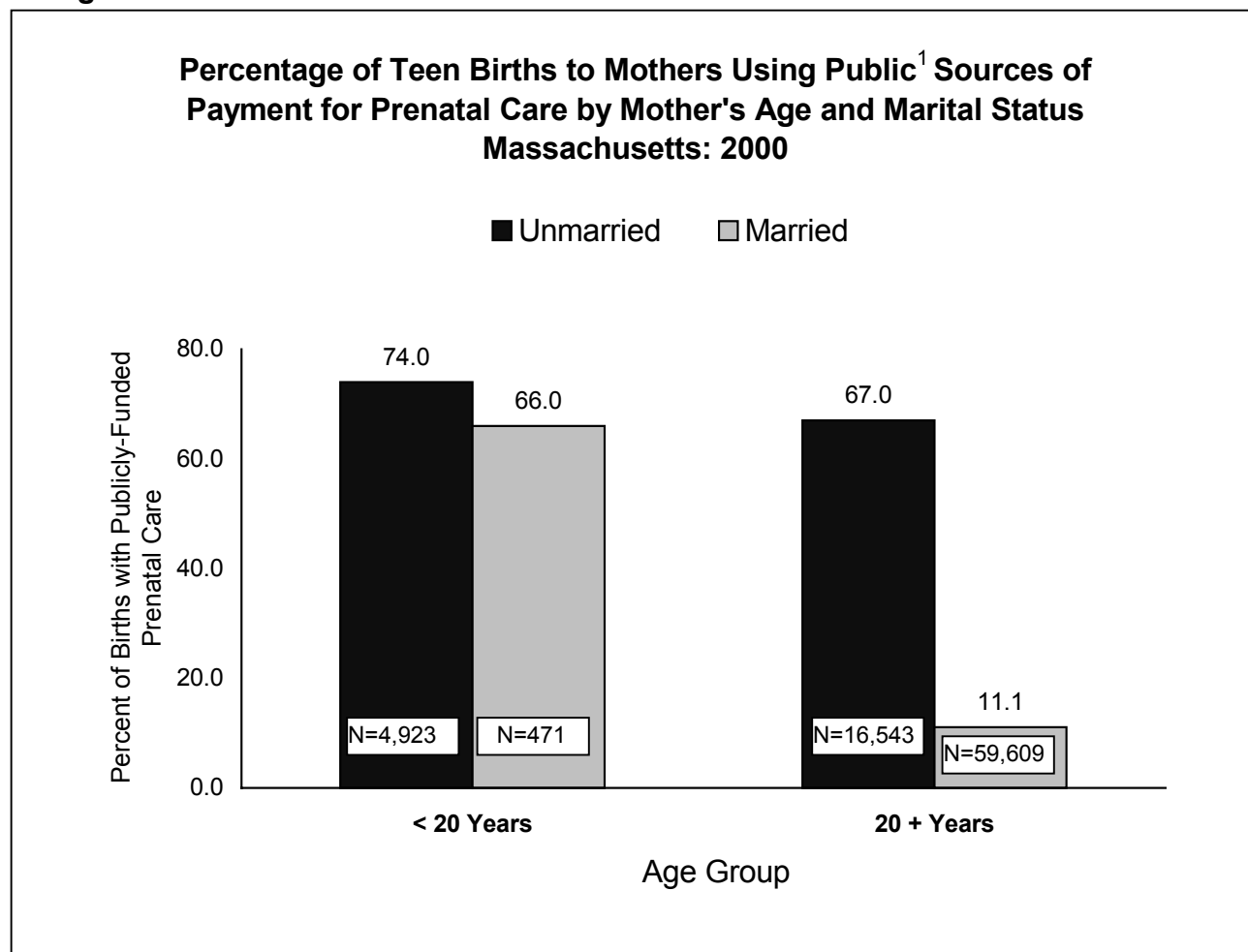
<sup>2</sup> Public: MassHealth (Medicaid), Healthy Start, Medicare, other government programs, and free care.

<sup>3</sup> Private: Commercial insurance.

<sup>4</sup> Other/Unknown: Mothers who self-designated Other race or for whom race was unknown.

- In 2000, 73.3% of teen births were to mothers who had prenatal care supported through public funds, in contrast to 23.3% of births to women 20 or older.
- Among teen births, the percentage of mothers receiving publicly-funded prenatal care varied by race/Hispanic ethnicity: 85.8% of Hispanic births, 82.2% of black non-Hispanic births, 76.0% of Asian births, and 61.8% of white non-Hispanic births were to mothers who received publicly-funded prenatal care. Compared with teen births, the percentage of adult births to mothers who received publicly-funded prenatal care was lower within each race/Hispanic ethnicity group.

**Figure 6.**



Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

<sup>1</sup> Public: Mass Health (Medicaid), Medicare, Healthy Start, free care and other government programs. Free care was included in this category for the first time in 1997 (see Technical Notes); therefore, these data are not comparable with prior reports.

- In 2000, 74.0% of teen births to unmarried mothers and 66.0% of teen births to married mothers were to women who received publicly-funded prenatal care. Between 1999 and 2000 there was an increase in the use of publicly-funded prenatal care for both unmarried and married teen and adult mothers (1999 data not shown).
- Differences among adult mothers were more pronounced, where 67.0% of births to unmarried adult mothers were to women who received publicly-funded prenatal care compared to only 11.1% of births to married adult mothers.

**Table 8.**  
**Trends in Births to Unmarried Mothers by Age of Mother**  
**Massachusetts: 1995-2000**

Unmarried Mother's Age	1995		1996		1997		1998		1999		2000	
	N <sup>1</sup>	% <sup>2</sup>	N <sup>1</sup>	% <sup>2</sup>	N <sup>1</sup>	% <sup>2</sup>	N <sup>1</sup>	% <sup>2</sup>	N <sup>1</sup>	% <sup>2</sup>	N <sup>1</sup>	% <sup>2</sup>
<b>All Ages<sup>3</sup></b>	20,857	25.6	20,253	25.3	20,640	25.7	21,191	26.0	21,448	26.5	21,621	26.5
<b>20 +</b>	15,370	20.4	14,973	20.2	15,300	20.6	15,841	21.0	16,355	21.7	16,696	21.9
<b>&lt; 20</b>	5,487	89.9	5,280	90.3	5,339	90.4	5,350	90.7	5,093	91.1	4,924	91.3
<b>18-19</b>	3,210	86.5	3,142	87.0	3,216	87.0	3,300	87.6	3,229	88.2	3,166	88.8
<b>12-17</b>	2,277	95.0	2,138	95.6	2,123	95.6	2,050	96.2	1,864	96.8	1,758	96.1

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

<sup>1</sup> Number of births to unmarried women.

<sup>2</sup> Percentage of all births based on total number of births within each age category.

<sup>3</sup> "All Ages" includes birth to mothers of unknown age.

- In 2000, 91.3% of all teen births were to unmarried mothers. The percentage of teen births to unmarried mothers was slightly higher among younger mothers (12-17) (96.1%), and slightly lower among mothers aged 18-19 (88.8%).
- The percentage of all Massachusetts births to unmarried mothers has remained relatively stable since 1995. There continues to be a considerable difference between teen and adult mothers in the percentage of out-of-wedlock births (91.3% vs. 21.9%, respectively).
- In 2000, the percentage of teen births to unmarried mothers was higher in Massachusetts (91.3%) than in the U.S. as a whole (79.0%, U.S. data not shown).

**Table 9.**  
**Births to Unmarried Mothers by Mother's Race/Hispanic Ethnicity and Age**  
**Massachusetts: 2000**

Unmarried Mother's Age	White*		Black*		Hispanic		Asian*		Other*		Unknown		Total	
	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>	N	% <sup>1</sup>
<b>All Ages<sup>2</sup></b>	11,018	18.3	3,301	57.4	5,766	62.4	742	15.9	738	48	56	17.2	21,621	26.5
<b>20+</b>	8,738	15.2	2,629	51.9	4,179	55.9	555	12.5	545	41.3	50	15.8	16,696	21.9
<b>&lt; 20</b>	2,279	91.2	672	97.4	1,587	89.9	187	86.2	193	89.8	6	75	4,924	91.3
<b>18-19</b>	1,585	88.7	438	96.7	898	86.8	107	81.1	132	86.8	6	75	3,166	88.8
<b>12-17</b>	694	97.2	234	98.7	689	94.4	80	94.1	61	96.8	0	0.0	1,758	96.1

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\* Non-Hispanic

<sup>1</sup> Percentages are based on total number of births within each age and race/Hispanic ethnicity category.

<sup>2</sup> "All Ages" includes births to mothers of unknown age.

- In 2000, there was less variation in marital status by race/Hispanic ethnicity among birth to teen mothers (< 20 years of age) than among births to adult mothers. In 2000, 97.4% of black non-Hispanic teen births, 91.2% of white non-Hispanic teen births, 89.9% of Hispanic teen births, and 86.2% of Asian teen births were to unmarried mothers.

**Table 10.**  
**Trends in In-Hospital Paternity Acknowledgment<sup>1</sup> by Age of Unmarried Mother**  
**Massachusetts: 1995-2000**

Unmarried Mother's Age	1995		1996		1997		1998		1999		2000	
	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>
<b>All Ages<sup>4</sup></b>	12,223	58.6	13,195	66.0	14,433	69.9	14,724	69.5	15,103	70.4	15,513	71.7
<b>20+</b>	9,251	60.2	9,939	67.1	10,906	71.3	11,253	71.0	11,751	71.8	12,137	72.7
<b>&lt; 20</b>	2,972	54.2	3,256	62.8	3,526	66.0	3,471	64.9	3,352	65.8	3,376	68.6
<b>18-19</b>	1,833	57.1	1,999	65.0	2,199	68.4	2,210	67.0	2,180	67.5	2,234	70.6
<b>12-17</b>	1,139	50.0	1,257	59.7	1,327	62.5	1,261	61.5	1,172	62.9	1,142	65.0

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

<sup>1</sup> Paternity acknowledged: Voluntary self-acknowledgment by fathers or acknowledgment through legal action. This table reflects data collected in hospitals at time of birth only (see Glossary for further explanation).

<sup>2</sup> Number of births to unmarried mother that were acknowledged by the father in the hospital.

<sup>3</sup> Percentages are based on total number of births to unmarried women within each age category.

<sup>4</sup> "All Ages" includes births to mothers of unknown age.

- Paternity acknowledgement of births to unmarried mothers remained slightly higher among adult mothers (72.7%) compared to teen mothers (68.6%) in 2000.
- From 1995 to 2000, paternity acknowledgment of births to unmarried teen mothers rose more (26.6%: from 54.2% to 68.6%) than among births to unmarried adult mothers (20.8%: from 60.2% to 72.7%).
- Between 1999 and 2000, increases in paternity acknowledgment of infants born to unmarried teens occurred among both younger (ages 12-17) and older (ages 18-19) teen mothers.

**Table 11.**  
**In-Hospital Paternity Acknowledgment<sup>1</sup> by Unmarried Mother's**  
**Race/Hispanic Ethnicity and Age**  
**Massachusetts: 2000**

Unmarried Mother's Age	White*		Black*		Hispanic		Asian*		Other*		Unknown		Total	
	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>	N <sup>2</sup>	% <sup>3</sup>
<b>All Ages<sup>4</sup></b>	8,590	78.0	1,765	53.5	4,108	71.2	516	69.5	499	67.6	35	62.5	15,513	71.7
<b>20+</b>	6,930	79.3	1,448	55.1	2,989	71.5	376	67.7	362	66.4	32	64.0	12,137	72.7
<b>&lt; 20</b>	1,660	72.8	317	47.2	1,119	70.5	140	74.9	137	71.0	3	**	3,376	68.6
<b>18-19</b>	1,180	74.4	226	51.6	644	71.7	87	81.3	94	71.2	3	**	2,234	70.6
<b>12-17</b>	480	69.2	91	38.9	475	68.9	53	66.3	43	70.5	0	0.0	1,142	65.0

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\* Non-Hispanic \*\* Calculations based on 1-4 events are excluded.

<sup>1</sup> Only includes births with in-hospital paternity acknowledgment (see Glossary for further explanation).

<sup>2</sup> Number of births to unmarried mothers that were acknowledged by the father in the hospital.

<sup>3</sup> Percentages are based on the total number of births to unmarried mothers within each age and race/Hispanic ethnicity category.

<sup>4</sup> "All Ages" includes births to mothers of unknown age.

- In-hospital paternity acknowledgment varied widely by race/Hispanic ethnicity among mothers of all ages, ranging from a high of 78.0% among births to white non-Hispanic unmarried mothers to a low of 53.5% among births to black non-Hispanic unmarried mothers.
- Compared with adult mothers, in-hospital paternity acknowledgement was less common among births to teen mothers in each race/Hispanic ethnicity group except for Asians and women of Other races.
- Between 1999 and 2000, in-hospital paternity acknowledgement increased from 65.8% to 68.6% among births to all unmarried teen mothers (<20 years) (1999 data not shown).

**Table 12.**  
**Father's Age by Unmarried Mother's Age for Births with Acknowledged Paternity<sup>1</sup>**  
**Massachusetts: 2000**

Unmarried Mother's Age	Father's Age													
	12-15		16-17		18-19		20-24		25-29		30 and Older		Total <sup>3</sup>	
	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>
20 +	0	0.0	36	0.3	312	2.6	3,149	26.0	3,453	28.5	5,146	42.5	12,096	100.0
< 20	29	0.9	330	9.8	979	29.0	1,586	47.0	331	9.8	118	3.5	3,373	100.0
< 18	25	2.2	233	20.4	429	37.6	378	33.1	65	5.7	12	1.1	1,142	100.0
18-19	4	**	97	4.3	550	24.7	1,208	54.1	266	11.9	106	4.8	2,231	100.0
16-17	8	0.8	183	18.7	375	38.2	342	34.9	61	6.2	12	1.2	981	100.0
12-15	17	10.6	50	31.1	54	33.5	36	22.4	4	**	0	0.0	161	100.0

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\*\* Calculations based on 1-4 events are excluded.

<sup>1</sup> Only includes births with in-hospital paternity acknowledgment (see Glossary for further explanation).

<sup>2</sup> Percentages are based on the total number of fathers whose ages were identified by unmarried mothers within each age category. Only includes births with in hospital paternity acknowledgment (see Glossary for further explanation).

<sup>3</sup> "Total" includes births to fathers with unknown ages.

- Among births to unmarried adult women (ages 20 or older), 97.0% of the named fathers were also 20 or older. This figure is a slight increase from 95.1% in 1999 (1999 data not shown). Among births to unmarried teens (<20 years of age), 60.3% of the named fathers were 20 and older compared to 53.4% in 1999 (1999 data not shown).
- Among births to unmarried teen mothers ages 12-15, the percentage of named fathers who were 20 or older increased from 14.3% in 1999 to 24.8% in 2000. Similarly, among births to 16-17 year old unmarried mothers, the percentage of named fathers who were 20 or older, increased from 37.4% in 1999 to 42.3% in 2000 (1999 data not shown).
- In 2000, 118 infants born to unmarried teen mothers with acknowledged paternity were to fathers 30 years or older.

**Table 13.**  
**Maternal Smoking<sup>1, 2</sup> During Pregnancy by Mother's Age and**  
**Race/Hispanic Ethnicity**  
**Massachusetts: 2000**

Mother's Race/Ethnicity	< 20 Years			20+ Years		
	Births N	Smokers N	%	Births N	Smokers N	%
<b>Total<sup>3</sup></b>	5,384	1,023	19.0	75,813	6,888	9.1
White*	2,498	739	29.6	57,481	5,671	9.9
Black*	689	66	9.6	5,061	442	8.7
Hispanic	1,764	170	9.6	7,479	586	7.8
Asian*	216	17	7.9	4,449	56	1.3
Other*	215	31	14.4	1,317	133	10.1

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\* Non-Hispanic

<sup>1</sup> Any amount of cigarette smoking by mother during pregnancy.

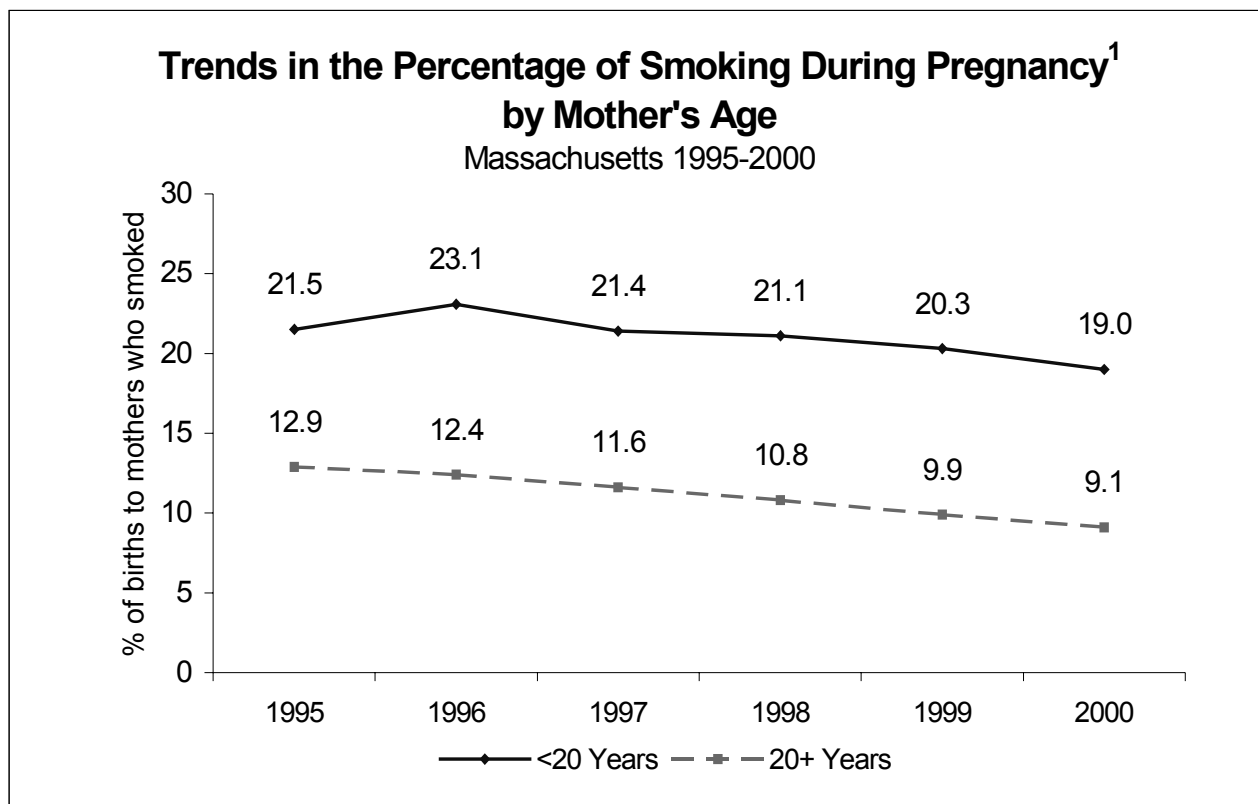
<sup>2</sup> Maternal smoking is self-reported by mothers, usually following the birth of their child, and as such these data should be interpreted cautiously. Smoking during pregnancy may be under-reported, thus artificially lowering smoking prevalence.

<sup>3</sup> Total includes births with unknown race/Hispanic ethnicity among mothers with known smoking status (N=5384).

- In 2000, teen mothers reported more than double the rate of smoking during pregnancy than adult mothers (19.0% vs. 9.1%, respectively). Teen mothers reported higher rates of smoking compared to adult mothers in every race/Hispanic ethnicity group.
- Among births to teen mothers, white non-Hispanic mothers had the highest prevalence of smoking (29.6%), three times higher than their adult counterparts (9.9%). Asian mothers had the lowest prevalence of smoking, 7.9% among teens and 1.3% among adult mothers.



**Figure 7.**



Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

<sup>1</sup> Any amount of cigarette smoking by mother during pregnancy. Maternal smoking is self-reported by mothers, usually following the birth of their child, and as such these data should be interpreted cautiously. Smoking during pregnancy may be under-reported, thus artificially lowering smoking prevalence

- In 2000, both teen mothers and adult mothers reported a six-year low in the percentage of mothers who smoked during pregnancy.
- From 1995 to 2000, the percentage of births to adult mothers who smoked during pregnancy decreased 29.5% (from 12.9% to 9.1%). During the same time period, the percentage of births to teen mothers who smoked during pregnancy declined 11.6% (from 21.5% to 19.0%).

**Table 14.**  
**Smoking Level<sup>1, 2</sup> Before and During Pregnancy among**  
**Teen Mothers, Massachusetts: 2000**

Smoking Prior To Pregnancy			Smoking During Pregnancy					
	N	% <sup>3</sup>	Quit		Reduced		Same or More	
	N	% <sup>3</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>	N	% <sup>4</sup>
All Smokers	1,715	31.8	704	41.0	762	44.4	249	14.5
Light Smokers <sup>1</sup>	926	17.2	471	50.9	269	29.0	186	20.1
Moderate Smokers <sup>1</sup>	684	12.7	214	31.3	413	60.4	57	8.3
Heavy Smokers <sup>1</sup>	105	2.0	19	18.1	80	76.2	6	5.7

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

<sup>1</sup> Light = 1-10 cigarettes, Moderate = 11-20 cigarettes, Heavy = 21+ cigarette, based on number of cigarettes smoked daily.

<sup>2</sup> Any amount of cigarette smoking by mother during pregnancy. Maternal smoking is self-reported by mothers, usually following the birth of their child, and as such these data should be interpreted cautiously. Smoking during pregnancy may be under-reported, thus artificially lowering smoking prevalence.

<sup>3</sup> Percentage of all teen births.

<sup>4</sup> Percentage of births to mothers who smoked prior to pregnancy.

- In 2000, 31.8% of teen births were to mothers who smoked prior to pregnancy.
- The fewer cigarettes per day a teen woman smoked prior to pregnancy, the more likely she was to quit during pregnancy. Among teen mothers who smoked prior to pregnancy, 50.9% of light smokers (1-10 cigarettes daily), 31.3% of moderate smokers (11-20 cigarettes daily), and 18.1% of heavy smokers (21+ cigarettes daily) quit smoking during pregnancy.
- In 2000, 84.1% of all mothers who smoked prior to pregnancy quit or reduced cigarette consumption, with little difference between adult (84.0%) and teen mothers (85.4%) (adult data not shown).

**Table 15.**  
**Expected Educational Attainment among Teen Mothers**  
**by Race/Hispanic Ethnicity,**  
**Massachusetts: 1997- 2000**

<b>Behind Grade Level<sup>1</sup></b>								
<b>Mother's Race/ Ethnicity</b>	<b>1997</b>		<b>1998</b>		<b>1999</b>		<b>2000</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
<b>Total</b>	1,744	29.7	1,833	31.1	1,771	31.7	1,724	32.1
White*	760	26.6	831	28.2	790	29.5	756	30.3
Black*	141	17.8	147	19.8	151	21.0	166	24.1
Hispanic	721	40.0	735	41.4	700	40.1	680	38.6
Asian*	63	29.4	53	28.6	66	30.7	62	28.8
Other	59	28.9	66	27.6	64	29.5	59	27.4
Unknown	0	0.0	1	**	0	0.0	1	**

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\* Non-Hispanic \*\* Calculations based on 1-4 events are excluded.

<sup>1</sup> "Behind Grade Level" is defined as two or more years behind the maximum expected age for a grade at the time of delivery (see Technical Notes and Glossary for further explanation).

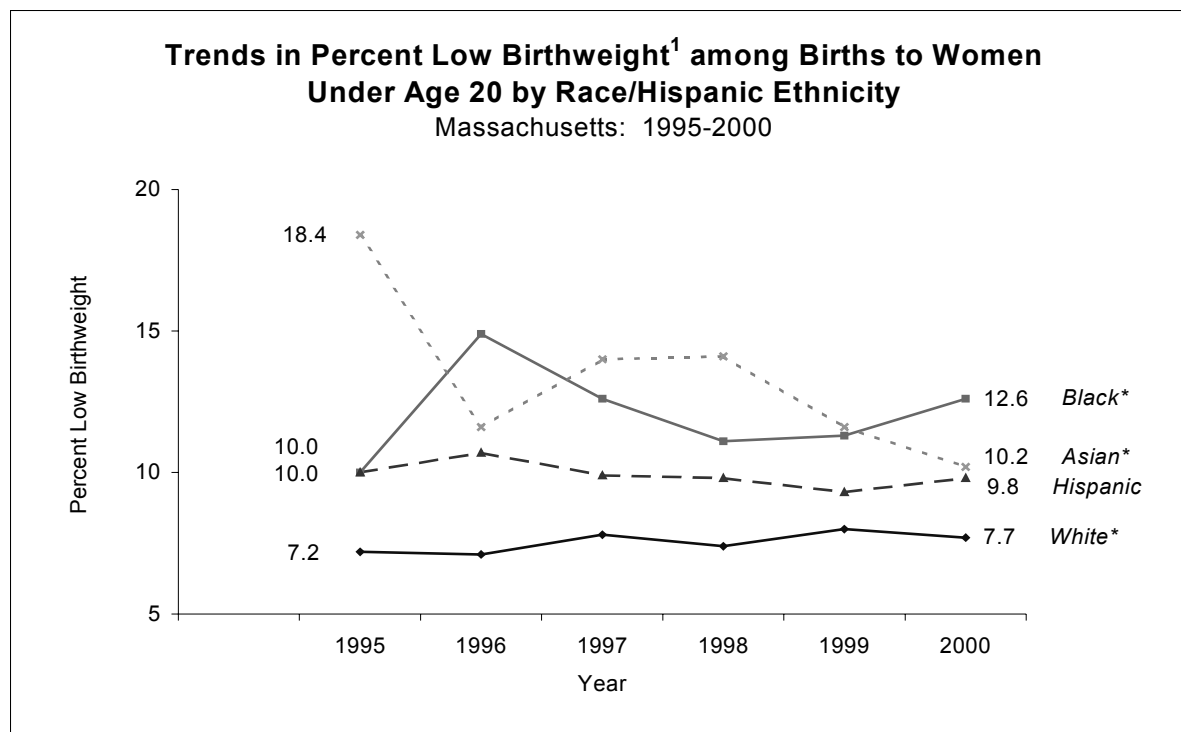
- In 2000, just under one in three teen births was to a mother who was behind her expected grade level at school, (32.1%), a slight increase from prior years.
- Hispanic teen births were the most likely to be to mothers who were behind their expected grade level (38.6%), followed by white non-Hispanic teen births (30.3%) and Asian teen births (28.8%). From 1997 to 2000, black non-Hispanic teen births were least likely to be to mothers who were behind their expected grade level at the time of delivery.
- From 1997 to 2000, the overall percentage of births to teen mothers who were behind their expected grade level increased 8.1% (from 29.7% to 32.1%). Black non-Hispanics had the greatest increase (21.2%; from 17.8% to 24.1%), followed by white non-Hispanics (12.5%; from 26.6% to 30.3%). The percentage declined, however, among Hispanics and Asians.

*II.*

*Birth Outcomes and  
Prenatal Care*



**Figure 8.**



	1995	1996	1997	1998	1999	2000
White*	7.2	7.1	7.8	7.4	8.0	7.7
Black*	10.0	14.9	12.6	11.1	11.3	12.6
Hispanic	10.0	10.7	9.9	9.8	9.3	9.8
Asian*	18.4	11.6	14.0	14.1	11.6	10.2
Total	8.6	9.4	9.5	8.9	9.0	9.3

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\* Non-Hispanic

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

- In 2000, the overall proportion of low birthweight births (less than 2,500 grams) among teen births was 9.3%, a slight increase from 1999 (9.0%).
- The occurrence of low birthweight (LBW) among teens continued to differ by race/Hispanic ethnicity groups. In 2000, the percentage of LBW infants among births to teens was 12.6% for black non-Hispanic teen mothers, 10.2% for Asians, 9.8% for Hispanics, and 7.7% for white non-Hispanic teen mothers.
- White and Asian teen births showed a decline in low birthweight from 1999 to 2000. *As the number of births to Asian teen mothers is small (n=217 in 2000), their LBW percentages fluctuate widely and changes over time should be interpreted with caution.*

**Table 16.**  
**Low Birthweight<sup>1</sup> Births by Mother's Age and Race/Hispanic Ethnicity**  
**Massachusetts: 2000**

Mother's Age	White*		Black*		Hispanic		Asian*		Other		Unknown		Total	
	N <sup>2</sup>	%	N <sup>2</sup>	%	N <sup>2</sup>	%	N <sup>2</sup>	%	N <sup>2</sup>	%	N <sup>2</sup>	%	N <sup>2</sup>	%
<b>All Ages<sup>3</sup></b>	3,780	6.4	690	12.0	756	8.2	333	7.3	137	9.0	15	6.6	5,711	7.1
<b>20 +</b>	3,590	6.4	603	12.0	583	7.8	311	7.1	113	8.6	14	6.2	5,214	7.0
<b>&lt; 20</b>	190	7.7	87	12.6	173	9.8	22	10.2	24	11.3	1	**	497	9.3
<b>18-19</b>	130	7.4	54	11.9	97	9.4	14	10.7	20	13.2	1	**	316	8.9
<b>12-17</b>	60	8.5	33	13.9	76	10.4	8	9.4	4	**	0	0.0	181	9.9

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\*Non-Hispanic \*\* Calculations based on 1-4 events are excluded.

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>2</sup> "N" is the total number of low birthweight births in each category.

<sup>3</sup> "All Ages" includes births to women with unknown age.

- In 2000, the percentage of low birthweight births among teen births was 24.7% higher than it was for births to adult women (9.3% vs. 7.0%, respectively).
- The younger teens (ages 12-17) had a higher low birthweight rate (9.9%) compared to women age 18-19 (8.9%).
- Births to black non-Hispanic teens were 64% more likely to be low birthweight than were births to white non-Hispanic teen women (12.6% vs. 7.7%).
- The smallest difference between teen and adult low birthweight rates was found among births to black non-Hispanic women, while the largest difference was found among births to Asians and women of Other races. The low birthweight rate among Asian teen births was 30.4% higher than the low birthweight rate among Asian adult births.

**Table 17.**  
**Low Birthweight<sup>1</sup> among Teen Births by Level of Prenatal Care<sup>2, 3</sup>**  
**And Mother's Race/Hispanic Ethnicity, Massachusetts: 2000**

Mother's Race/Hispanic Ethnicity	Level of Prenatal Care								
	Adequate			Intermediate			Inadequate/None		
	Births	Low Birthweight		Births	Low Birthweight		Births	Low Birthweight	
	N	N	%	N	N	%	N	N	%
<b>&lt; 20 Years<sup>4</sup></b>	3,227	270	8.4	1,631	174	10.7	460	46	10.0
White*	1,582	106	6.7	691	65	9.4	181	16	8.8
Black*	380	46	12.1	223	32	14.3	77	9	11.7
Hispanic	1,049	95	9.1	556	60	10.8	150	17	11.3
Asian*	79	7	8.9	100	9	9.0	34	3	**
Other*	135	15	11.1	60	8	13.3	18	1	**

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\* Non-Hispanic \*\* Calculations based on 1-4 events are excluded.

<sup>1</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>2</sup> Adequacy of Prenatal Care is determined by a calculation that combines trimester of prenatal care registration with the number of prenatal care visits and adjusts for gestational age (see Glossary for further explanation).

<sup>3</sup> Due to a change in 1996 in the collection of information on Adequacy of Prenatal Care, caution should be used when comparing these data over time. (See Technical Notes for an explanation of these changes.)

<sup>4</sup> Total includes births of unknown race/Hispanic ethnicity.

- In 2000, teen births to mothers who had intermediate or had inadequate or no prenatal care were more likely to be a low birthweight (10.7% and 10.0%, respectively) than births to mothers who received adequate care (8.4%).
- Births to black non-Hispanic teens who had adequate prenatal care had a substantially higher percentage of low birthweight (12.1%) than births to white non-Hispanic teens who had adequate prenatal care (6.7%).
- In 2000, among all race/Hispanic ethnicity groups, births to teen mothers who received intermediate prenatal care had higher rates of low birthweight than births to teen mothers who received adequate prenatal care. The largest difference was among teen births to white non-Hispanic mothers (9.4% vs. 6.7%, respectively).



**Table 18.**  
**Low Birthweight by Mother's Age, Smoking<sup>1, 2</sup> Status**  
**and Race/Hispanic Ethnicity, Massachusetts: 2000**

	Smokers			Non-Smokers		
	Births	LBW		Births	LBW	
Mother's Age	N	N	% <sup>3</sup>	N	N	% <sup>3</sup>
<b>20 Years and Older</b>	7,021	738	10.9	70,083	4,456	6.6
White*	5,671	545	9.8	51,810	3,037	6.0
Black*	442	80	18.2	4,619	523	11.4
Hispanic	586	92	15.8	6,893	491	7.1
Asian*	56	1	**	4,393	310	7.2
Other/Unknown*	266	20	15.2	2,368	95	4.0
<b>&lt; 20 Years</b>	1,023	95	9.3	4,361	402	9.3
White*	739	60	8.2	1,759	130	7.5
Black*	66	6	9.1	623	81	13.0
Hispanic	170	23	13.5	1,594	150	9.4
Asian*	17	2	**	199	20	10.1
Other/Unknown*	31	4	**	186	21	11.3

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\* Non-Hispanic \*\* Calculations based on 1-4 events are excluded.

<sup>1</sup> Any amount of cigarettes smoked by mother during pregnancy.

<sup>2</sup> Maternal smoking is self-reported by mothers, usually following the birth of their child, and as such these data should be interpreted cautiously. Smoking during pregnancy may be under-reported, thus artificially lowering smoking prevalence.

<sup>3</sup> Percentage of all births that were <2,500 grams within each smoking, age and race/Hispanic ethnicity category.

- In 2000, low birthweight births were more common among adult mothers who smoked compared to those who did not smoke during pregnancy (10.9% vs. 6.6%), while the percentage of low birthweight births to teen mothers was the same regardless of whether the mothers smoked.
- Low birthweight was higher among smokers compared to non-smokers within each race/Hispanic ethnicity group and both age groups, except among births to black non-Hispanic teen mothers, where low birthweight was higher among non-smokers than among smokers.
- From 1999 to 2000, the percentage of low birthweight births to teen mothers who smoked decreased (from 10.2% in 1999 to 9.3% in 2000), and remained essentially stable for adult mothers who smoked (from 11.0% to 10.9%) (1999 data not shown).

**Table 19.**  
**Selected Birth Characteristics By Mother's Age and**  
**Race/Hispanic Ethnicity, Massachusetts: 2000**

Mother's Race/ Ethnicity	Birthweight <sup>1</sup>				Prenatal Care				C-Section	Breast-feeding <sup>4</sup>		
	Very Low		Low		Adequate Care <sup>2,3</sup>		First Trimester					
	N	%	N	%	N	%	N	%	N	%		
All Ages	1,090	1.4	5,711	7.1	63,109	79.1	66,952	83.8	19,086	23.8	58,188	73.8
20 + Years	1,007	1.3	5,214	7.0	59,880	80.4	63,416	85.0	18,344	24.1	55,104	74.9
< 20 Years <sup>5</sup>	83	1.5	497	9.3	3,228	60.7	3,535	66.3	742	13.8	3,084	58.2
White*	35	1.4	190	7.6	1,583	64.4	1,709	69.4	357	14.3	1,239	50.9
Black*	20	2.9	87	12.6	380	55.9	427	62.3	111	16.1	424	61.9
Hispanic	23	1.3	173	9.8	1,049	59.8	1,155	65.7	235	13.3	1,177	67.1
Asian*	2	**	22	10.1	79	37.1	94	43.9	9	4.1	107	50.2
Other*	2	**	24	11.2	135	63.4	147	69.0	29	13.5	136	63.8

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\* Non-Hispanic \*\* Calculations based on 1-4 events are excluded.

<sup>1</sup> Very low birthweight: < 1,500 grams or 3.3 pounds; Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>2</sup> Adequacy of Prenatal Care is determined by a calculation that combines trimester of prenatal care registration with the number of prenatal care visits and adjusts for gestational age. (See Glossary for further explanation).

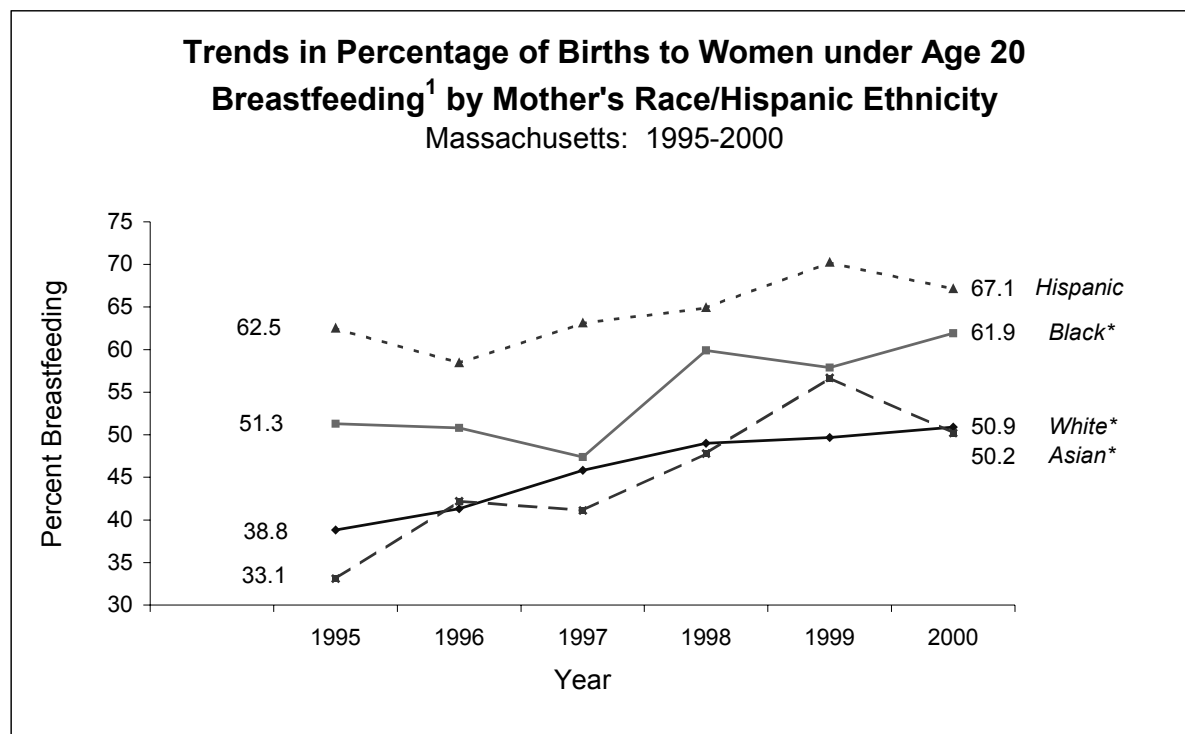
<sup>3</sup> Beginning in 1996, changes in the collection of information on Adequacy of Prenatal Care require that caution should be used when comparing these data over time. Refer to Technical Notes for an explanation of these changes.

<sup>4</sup> Mother was breastfeeding or intending to breastfeed at the time the birth certificate was completed.

<sup>5</sup> Total includes births with unknown race/Hispanic ethnicity.

- In 2000, the percentage of very low birthweight births (<1,500 grams or 3.3 pounds) was slightly higher among births to teens than among births to older women (1.5% vs. 1.3%, respectively). Among teen births, very low birthweight was highest among births to black non-Hispanic mothers (2.9%).
- As in previous years, the percentage of births to mothers who received adequate prenatal care was lower among women less than 20 than women age 20 or older (60.7% vs. 80.4%, respectively). The same was true for beginning prenatal care in the first trimester (66.3% vs. 85.0%, respectively). A higher percentage of white non-Hispanic and Hispanic teen births were to mothers who received adequate prenatal care (64.4% and 59.8% respectively) compared with other race/Hispanic ethnicity groups. Teen births to Asian mothers had the lowest percentage (37.1%) of adequate care, down from 47.1% in 1999.
- The percentage of births to teen mothers delivered by Cesarean increased from 1999 to 2000 (12.8% vs. 13.8%, respectively), as did the percentage among adult mothers (23.1% to 24.1%, respectively).
- An intention to breastfeed was reported by over half of teen mothers (58.2%) compared with nearly three-quarters (74.9%) of older mothers.

**Figure 9.**



	1995	1996	1997	1998	1999	2000
White*	38.8	41.3	45.8	49.0	49.7	50.9
Black*	51.3	50.8	47.4	59.9	57.9	61.9
Hispanic	62.5	58.4	63.1	64.9	70.2	67.1
Asian*	33.1	42.2	41.1	47.8	56.7	50.2
Total	47.5	48.0	51.4	55.6	57.9	58.2

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\* Non-Hispanic

<sup>1</sup> Mother was breastfeeding or intending to breastfeed at the time the birth certificate was completed.

- There has been a steady increase in the percentage of teen births to mothers reporting an intention to breastfeed. The overall percentage of teen births to mothers who reported breastfeeding or an intention to breastfeed increased 22.5% (from 47.5% to 58.2%) between 1995 and 2000.
- In 2000, Hispanic teen births continued to have the highest percentage of mothers who were breastfeeding or intending to breastfeed (67.1%), followed by teen births to black non-Hispanic mothers (61.9%). Teen births to white non-Hispanic and Asian mothers had the lowest percentage of mothers who were breastfeeding or intending to breastfeed (50.9% and 50.2%, respectively).

**Table 20.**  
**Births by Gestational Age, Mother's Age, and Mother's Race/Hispanic Ethnicity**  
**Massachusetts: 2000**

Mother's Age and Gestational Age <sup>1</sup> (weeks completed)	White*		Black*		Hispanic		Asian*		Other*		Unknown		Total	
	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>	N	% <sup>2</sup>
<b>20 + Years</b>	57,548	100.0	5,065	100.0	7,482	100.0	4,450	100.0	1,321	100.0	317	100.0	76,183	100.0
< 37 weeks	4,397	7.6	646	12.8	622	8.3	316	7.1	103	7.8	19	6.0	6,103	8.0
37-42 weeks	51,595	89.7	4,377	86.4	6,771	90.5	4,035	90.7	1,176	89.0	202	63.7	68,156	89.5
43 + weeks	67	0.1	6	0.1	10	0.1	5	0.1	1	**	1	**	90	0.1
Unknown	1,489	2.6	36	0.7	79	1.1	94	2.1	41	3.1	95	30.0	1,834	2.4
<b>&lt;20 Years</b>	2,500	100.0	690	100.0	1,765	100.0	217	100.0	215	100.0	8	100.0	5,395	100.0
< 37 weeks	192	7.7	80	11.6	168	9.5	20	9.2	18	8.4	1	**	479	8.9
37-42 weeks	2,226	89.0	603	87.4	1,563	88.6	193	88.9	187	87.0	2	**	4,774	88.5
43 + weeks	2	**	1	**	2	**	0	0.0	1	**	0	0.0	6	0.1
Unknown	80	3.2	6	0.9	32	1.8	4	**	9	4.2	5	62.5	136	2.5

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\*Non-Hispanic \*\* Calculations based on 1-4 events are excluded.

<sup>1</sup> Clinical estimate of the number of weeks of pregnancy completed as estimated by the attendant at birth or the postnatal physician. The gestational age categories have been revised for the 2000 report (see Technical Notes).

<sup>2</sup> Percentages are based on column totals.

- As in years prior, preterm births (< 37 weeks gestation) were more common among teen births than among births to older women (8.9% vs. 8.0%, respectively) in 2000.
- The risk of preterm delivery varied by race/Hispanic ethnicity both for teens and adults. The percentage of preterm births was 11.6% among black non-Hispanic teen mothers and 9.5% among Hispanic teen mothers. White non-Hispanic teen mothers had the lowest percentage of preterm delivery among race/Hispanic ethnicity groups (7.7%).

**Table 21.**  
**Trends in Infant Mortality Rates<sup>1</sup> by Mother's Age and**  
**Race/Hispanic Ethnicity, Massachusetts: 1990-1999<sup>2</sup>**

Year	Mother's Age	White*		Black*		Hispanic		Asian*		Other/Unk		Total	
		N <sup>3</sup>	Rate	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate	N <sup>3</sup>	Rate
1990	20+	393	5.8	82	13.6	54	8.1	19	6.1	12	13.4	560	6.6
	<20	31	7.4	17	15.2	14	8.2	1	**	1	**	64	8.7
1991	20+	338	5.2	75	13.2	48	7.2	17	5.5	8	8.6	486	6.0
	<20	38	9.9	14	13.2	20	11.3	1	**	2	**	75	10.7
1992	20+	336	5.2	90	16.0	41	6.1	18	5.8	13	12.3	498	6.2
	<20	32	9.0	20	18.9	20	11.5	0	0.0	2	**	74	11.1
1993	20+	317	5.1	67	12.4	46	7.1	10	3.2	10	9.7	450	5.8
	<20	25	7.2	14	14.0	23	12.7	1	**	1	**	64	9.7
1994	20+	293	4.8	73	13.9	37	5.7	12	3.8	14	13.7	429	5.6
	<20	33	10.0	8	8.0	20	10.3	1	**	2	**	64	9.7
1995	20+	228	3.8	55	11.0	48	7.6	15	4.6	13	12.1	359	4.8
	<20	25	7.8	7	8.1	15	8.7	0	0.0	1	**	48	7.9
1996	20+	247	4.2	56	12.0	34	5.6	8	2.5	18	11.9	363	4.9
	<20	21	7.1	11	13.6	13	7.5	1	**	2	**	48	8.2
1997	20+	251	4.3	46	9.6	43	6.7	11	3.1	18	12.5	369	5.0
	<20	14	4.9	11	13.8	12	6.6	0	0.0	4	**	41	6.9
1998	20+	257	4.4	51	10.6	45	6.5	13	3.6	10	7.0	376	5.0
	<20	21	7.1	7	9.4	14	7.9	1	**	1	**	44	7.5
1999	20+	230	4.0	68	13.3	33	4.7	12	3.1	14	9.7	359	4.8
	<20	24	8.9	11	15.3	13	7.4	1	**	3	**	52	9.3

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

Please note: data are preliminary and updated to include late-filed deaths; differences with previously published data may exist.

\* Non-Hispanic \*\* Calculations based on 1-4 events are excluded.

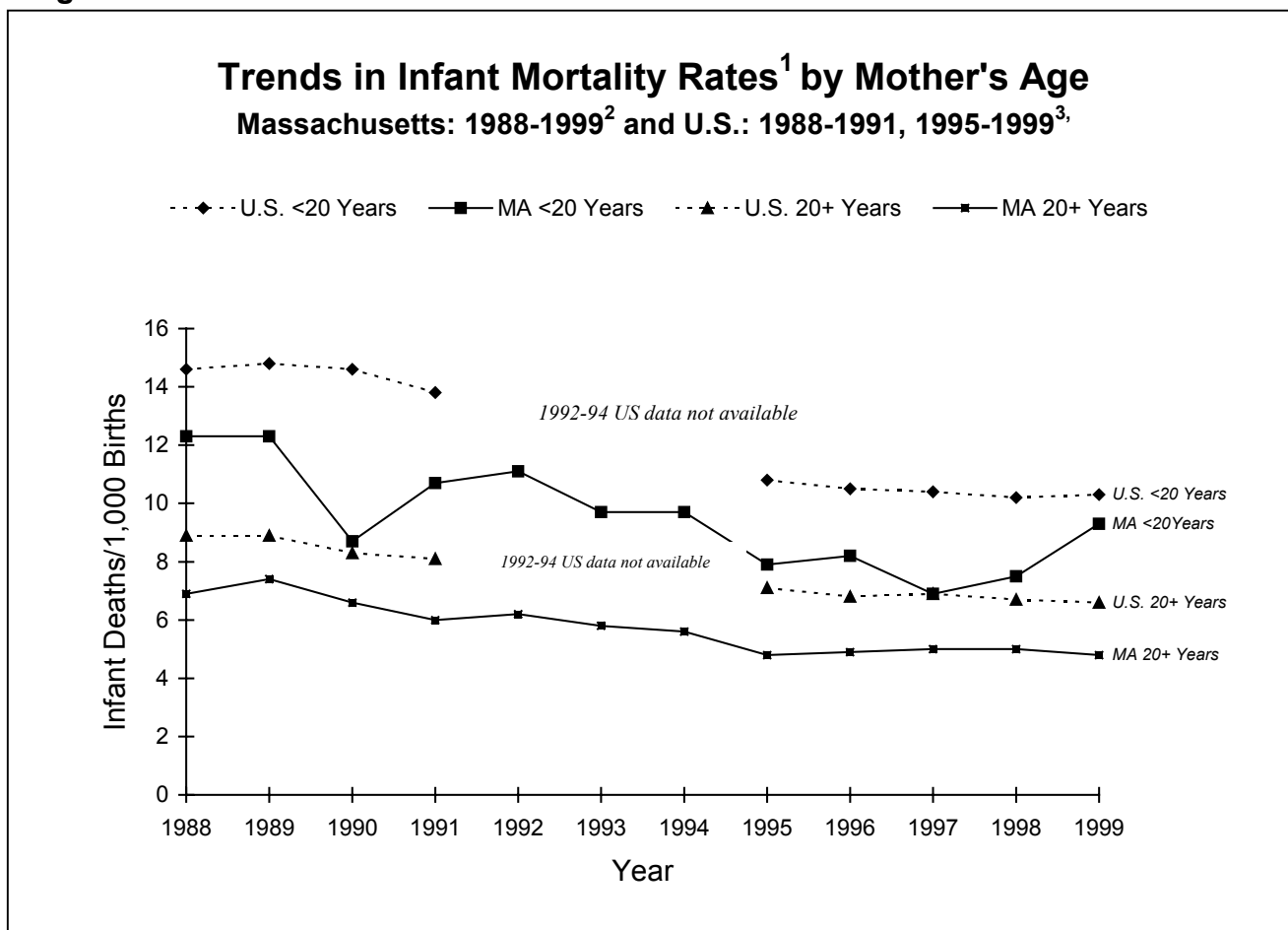
<sup>1</sup> Age and race-specific infant mortality rate: Number of infant deaths per 1,000 live births in each age and race/ethnicity group.

<sup>2</sup> 1999 data are preliminary and the most recent data available for this analysis (see Technical Notes for further explanation).

<sup>3</sup> "N" refers to the number of infants born in that year who died before their first birthday.

- As in previous years, the Infant Mortality Rate (IMR) for infants born in 1999 was higher among infants of teen mothers than the rate for infants of adult mothers for all race/Hispanic ethnicity groups.
- In 1999, the IMR was highest among births to black non-Hispanic teen mothers (15.3 deaths per 1,000 live births), followed by white non-Hispanic teen mothers (8.9 deaths per 1,000 live births) and lowest among infants born to Hispanic teen mothers (7.4 deaths per 1,000 live births).
- The IMR among infants born to black non-Hispanic teen mothers in 1999 was the highest it has been since 1992.
- The IMR among infants born to teen mothers increased each year from 1997 to 1999.

**Figure 10.**



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
U.S. <20 Years	14.6	14.8	14.6	13.8	N/A	N/A	N/A	10.8	10.5	10.4	10.2	10.3
MA <20 Years	12.3	12.3	8.7	10.7	11.1	9.7	9.7	7.9	8.2	6.9	7.5	9.3
U.S. 20+	8.9	8.9	8.3	8.1	N/A	N/A	N/A	7.1	6.8	6.9	6.7	6.6
MA 20+	6.9	7.4	6.6	6.0	6.2	5.8	5.6	4.8	4.9	5.0	5.0	4.8

Sources: Registry of Vital Records and Statistics, MDPH, 2002; National Center for Health Statistics, 1988-1991 and 1995-2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

<sup>1</sup> Age-specific infant mortality rate: Number of infant deaths per 1,000 live births to mothers in each age group (see Glossary for further explanation).

<sup>2</sup> 1999 data are preliminary and the most recent data available for this analysis (see Technical Notes for further explanation).

<sup>3</sup> U.S. data is not available for 1992-1994.

- The infant mortality rate (IMR) in Massachusetts remained lower than the national average among both teen and adult mothers, although the difference was not as great among teen mothers in 1999 as in previous years. The IMR among Massachusetts teen births in 1999 was 9.7% lower than the IMR among U.S. teen births (9.3 vs. 10.3 deaths per 1,000 live teen births).

**Table 22.**  
**Infant Mortality Rates<sup>1</sup> by Birthweight<sup>2</sup> and Mother's Age**  
**Massachusetts: 1999<sup>3</sup>**

Mother's Age	<1500g		1500-2499g		<2500g		2500+g	
	N <sup>4</sup>	IMR	N <sup>4</sup>	IMR	N <sup>4</sup>	IMR	N <sup>4</sup>	IMR
20 + Years	218	214.1	49	11.7	267	51.3	83	1.2
< 20 Years	30	294.1	7	17.5	37	73.6	14	2.8

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

<sup>1</sup> Age and birthweight-specific infant mortality rate: Number of infant deaths per 1,000 live births in each age and birthweight category (see Glossary for further explanation).

<sup>2</sup> Low birthweight: < 2,500 grams or 5.5 pounds.

<sup>3</sup> 1999 data are preliminary and the most recent year available for this analysis (see Technical Notes for further explanation).

<sup>4</sup> "N" refers to the number of deaths occurring in that age and birthweight category.

- Compared to infants of adult mothers, the infant mortality rates (IMR) were higher among infants of teen mothers in each birthweight category.
- From 1998 to 1999, the IMR for normal birthweight births (2500+ grams) to adult mothers decreased from 1.5 to 1.2, while the IMR for normal birthweight births to teen mothers increased from 1.7 to 2.8 (1998 data not shown).

**Table 23.**  
**Trends in Neonatal and Post Neonatal Mortality Rates**  
**by Mothers' Age**  
**Massachusetts: 1990-1999<sup>1</sup>**

Year	Mothers' Age	Neonatal <sup>2</sup> Mortality		Post Neonatal <sup>3</sup> Mortality		Total Infant <sup>4</sup> Mortality	
		N <sup>5</sup>	Rate	N <sup>5</sup>	Rate	N <sup>5</sup>	Rate
1990	20+	396	4.7	164	1.9	560	6.6
	<20	45	6.1	19	2.6	64	8.7
1991	20+	345	4.3	141	1.7	486	6.0
	<20	51	7.3	24	3.4	75	10.7
1992	20+	369	4.6	129	1.6	498	6.2
	<20	53	7.9	21	3.2	74	11.1
1993	20+	329	4.2	121	1.6	450	5.8
	<20	44	6.7	20	3.0	64	9.7
1994	20+	306	4.0	122	1.6	429	5.6
	<20	47	7.2	17	2.6	64	9.7
1995	20+	263	3.5	96	1.3	359	4.8
	<20	29	4.7	19	3.1	48	7.9
1996	20+	267	3.6	95	1.3	363	4.9
	<20	29	5.0	19	3.2	48	8.2
1997	20+	292	3.9	77	1.0	369	5.0
	<20	35	5.9	6	1.0	41	6.9
1998	20+	291	3.9	85	1.1	376	5.0
	<20	33	5.6	11	1.9	44	7.5
1999	20+	298	4.0	61	0.8	359	4.8
	<20	34	6.1	18	3.2	52	9.3

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

Please note: data are preliminary and updated to include late-filed deaths; differences with previously published data may exist.

<sup>1</sup> 1999 data are preliminary and the most recent available for this analysis (see Technical Notes for further explanation).

<sup>2</sup> Neonatal: Death less than 28 days after birth (see Glossary).

<sup>3</sup> Post neonatal: Death between 28-364 days after birth (see Glossary).

<sup>4</sup> Age-specific infant mortality rate: Number of infant deaths per 1,000 live births in each age group (see Glossary for further explanation).

<sup>5</sup> "N" refers to the number of infants born in that year who died before their first birthday.

- The neonatal mortality rate among infants born to teen mothers in 1999 was 6.1 deaths per 1,000 live births, up from 5.6 in 1998. The post-neonatal mortality rate was 3.2, the highest it has been since 1996.
- Both the neonatal and post-neonatal mortality rates among births to teen mothers remained higher than the rate among births to adult mothers in 1999.



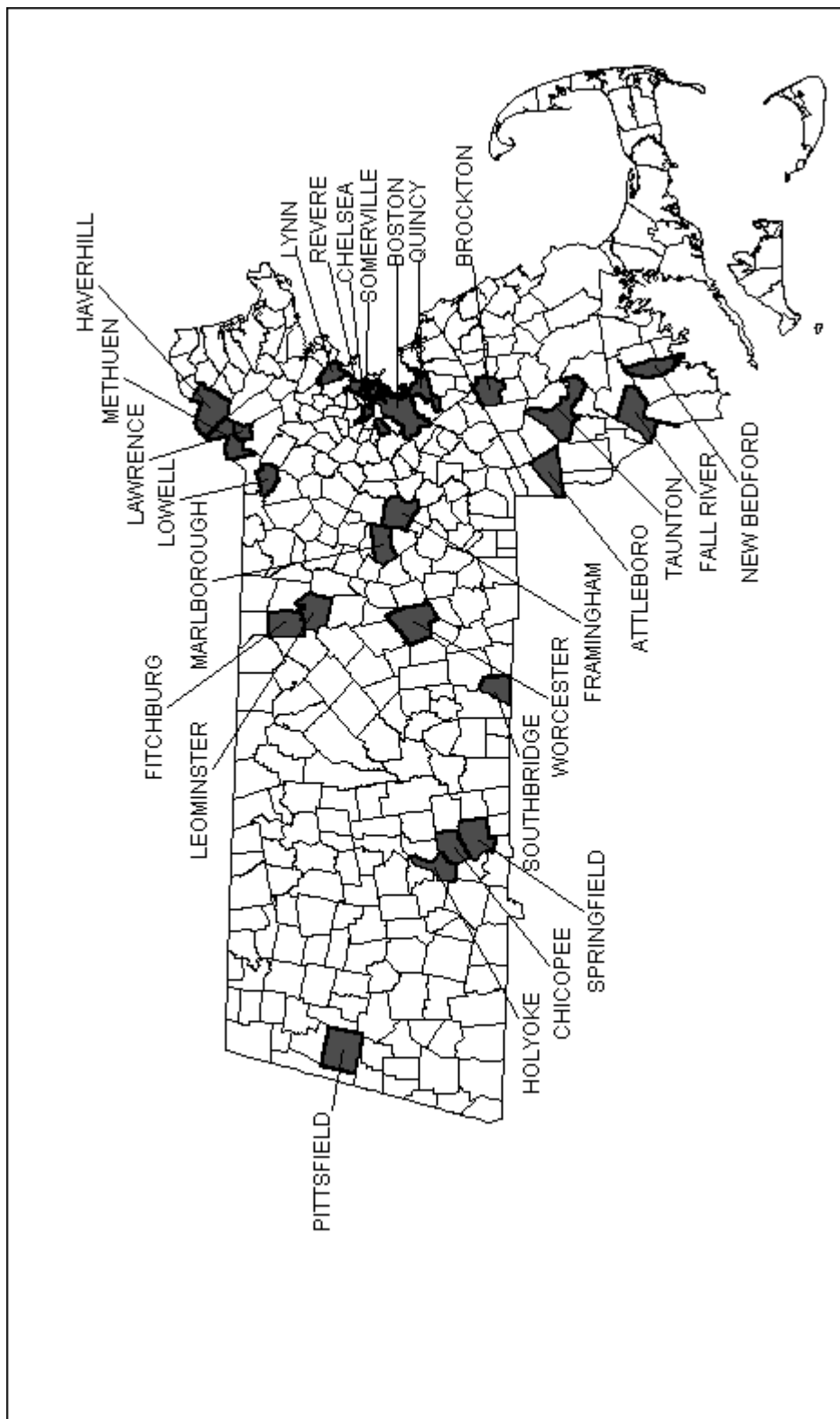


*III.*

*Birth Characteristics  
for Selected Communities*



Figure 11: 25 Communities with Highest Number of Teen Births, 2000



Source: Registry of Vital Records and Statistics, MDPH, BHSRE, 2002.  
Map Produced by Office of Statistics and Evaluation, MDPH, 2002.

**Table 24.**  
**Trends in Birth Rates among Women Ages 15-19**  
**for Selected Communities<sup>1</sup>, Ranked by 2000 Teen Birth Rate<sup>2, 3</sup>**  
**Massachusetts: 2000, 1999, 1990**

2000 Rank	Demographic Area	2000		1999		1990	
		Number Births 15-19	Teen Birth Rate	Number Births 15-19	Teen Birth Rate	Number Births 15-19	Teen Birth Rate
	<i>Massachusetts</i>	5,305	25.8	5,515	26.7	7,258	35.1
1	Lawrence	278	97.6	277	100.5	338	122.8
2	Holyoke	133	87.9	147	98.8	203	140.3
3	Chelsea	89	80.8	90	92.8	105	114.8
4	Springfield	466	77.2	485	83.4	523	87.9
5	Southbridge	38	68.3	41	73.9	48	82.5
6	Brockton	218	66.0	169	55.6	216	67.8
7	New Bedford	195	65.5	221	73.3	263	76.3
8	Lowell	248	63.4	235	61.5	309	81.3
9	Lynn	189	63.2	174	62.7	194	79.4
10	Fitchburg	92	60.6	94	59.8	146	82.1
11	Leominster	63	51.6	60	50.6	42	37.8
12	Fall River	150	51.5	150	52.1	246	76.9
13	Marlborough	36	43.5	26	32.1	34	37.9
14	Pittsfield	58	42.6	48	34.1	74	48.3
15	Worcester	290	41.9	304	45.0	399	58.8
16	Attleboro	47	40.8	33	28.3	53	45.9
17	Haverhill	68	37.9	82	47.6	94	60.4
18	Taunton	62	37.5	83	51.6	95	61.0
19	Boston	785	35.3	761	37.3	1,137	52.7
20	Chicopee	56	31.0	63	35.6	84	44.9
21	Revere	35	28.8	29	25.1	45	42.3
22	Methuen	35	27.7	42	33.0	53	41.7
23	Framingham	45	23.4	54	28.0	44	19.6
24	Somerville	47	22.5	64	34.1	64	29.2
25	Quincy	39	20.0	34	17.2	51	22.0

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All rates are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

<sup>1</sup> 25 communities with the greatest number of births to teens ages 15-19 in 2000.

<sup>2</sup> Rates are per 1,000 females ages 15-19 in each city/town.

<sup>3</sup> 2000 birth rates are calculated using MDPH 2000 population estimates, based on U.S. Census 2000 population counts. 1999 rates are calculated using the 1999 MDPH Massachusetts population estimates. Please note: Differences between these rates and previously published data reflect updates in population estimates. The 1990 population data are based on the 1990 Massachusetts Census Age, Race and Sex File (MARS File) (See Technical Notes for further explanation).

**Table 25.**  
**Birth Characteristics among Teen Births for Selected Communities,<sup>1</sup>**  
**Massachusetts: 2000**

Community	Low Birthweight (<2500 g)	Adequacy of Care <sup>2</sup>			Multiparous <sup>3</sup>	
		Adequate	Intermediate	Inadeq/ None		
	Percent	Percent	Percent	Percent	Number	Percent
<b>Massachusetts</b>	9.3	60.7	30.7	8.6	890	16.6
Attleboro	8.5	61.7	29.8	8.5	4	**
Boston	9.7	67.0	25.3	7.7	113	14.0
Brockton	14.7	51.4	39.4	9.2	47	21.5
Chelsea	8.8	45.1	44.0	11.0	14	15.4
Chicopee	11.9	64.4	27.1	8.5	10	16.9
Fall River	5.8	60.8	26.8	12.4	30	19.5
Fitchburg	6.4	64.9	27.7	7.4	19	20.2
Framingham	6.7	82.2	13.3	4.4	7	15.6
Haverhill	9.0	64.2	31.3	4.5	10	14.9
Holyoke	9.4	67.2	25.5	7.3	39	28.3
Lawrence	8.5	63.4	25.0	11.6	61	21.5
Leominster	4.7	65.1	23.8	11.1	15	23.4
Lowell	11.2	53.7	32.9	13.4	56	22.3
Lynn	12.9	49.0	42.7	8.3	40	20.6
Marlborough	16.7	62.9	28.6	8.6	7	19.4
Methuen	9.1	63.6	30.3	6.1	9	27.3
New Bedford	12.9	59.8	31.4	8.8	36	18.6
Pittsfield	6.9	44.8	39.7	15.5	8	13.8
Quincy	7.7	81.6	15.8	2.6	1	**
Revere	0.0	28.6	62.9	8.6	7	20.0
Somerville	8.5	48.9	42.6	8.5	6	12.8
Southbridge	7.7	74.4	23.1	2.6	9	23.1
Springfield	12.2	50.6	37.4	12.0	112	23.5
Taunton	9.7	57.4	39.3	3.3	11	17.7
Worcester	10.8	56.2	39.4	4.4	55	18.5

Source: Registry of Vital Records and Statistics, MDPH, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

\*\* Calculations based on 1-4 events are excluded.

<sup>1</sup> 25 communities with the greatest number of births to teens ages 15-19 in 2000.

<sup>2</sup> Adequacy of Prenatal Care is determined by a calculation that combines trimester of prenatal care registration with the number of prenatal care visits (see Technical Notes and Glossary for further information and definitions).

<sup>3</sup> Multiparous mothers have had at least one previous live birth.

**Table 26.**  
**Educational Attainment, Paternity Acknowledgement, Maternal Smoking**  
**and Breastfeeding among Teen Births for Selected Communities,<sup>2</sup>**  
**Massachusetts: 2000**

Community	Behind Grade Level <sup>3</sup>		Paternity Acknowledgement	Maternal Smoking <sup>4</sup>	Breastfeed Intent
	Number	Percent	Percent	Percent	Percent
<b>Massachusetts</b>	1,724	32.1	68.6	19.0	58.2
Attleboro	11	23.4	80.5	23.4	44.2
Boston	215	26.7	56.7	7.1	68.3
Brockton	83	37.9	56.9	13.7	52.3
Chelsea	23	25.3	69.6	6.6	87.9
Chicopee	28	48.3	78.2	27.1	50.8
Fall River	64	41.6	68.6	28.6	30.9
Fitchburg	27	28.7	68.2	20.2	70.2
Framingham	12	26.7	75.7	15.6	97.8
Haverhill	22	32.4	69.4	25.0	49.3
Holyoke	63	45.7	72.4	14.5	50.4
Lawrence	114	40.1	72.5	6.3	66.1
Leominster	22	34.4	70.0	23.4	62.5
Lowell	97	39.0	75.1	20.4	47.4
Lynn	80	41.2	66.7	17.0	69.1
Marlborough	16	44.4	73.3	11.1	66.7
Methuen	14	40.0	74.2	8.6	69.7
New Bedford	63	32.3	71.7	17.4	43.5
Pittsfield	21	36.2	58.9	41.4	46.6
Quincy	6	15.4	52.8	30.8	53.8
Revere	9	25.7	77.8	2.9	74.3
Somerville	21	45.7	70.6	19.1	60.9
Southbridge	14	35.9	73.0	38.5	41.0
Springfield	160	33.5	68.9	17.0	49.7
Taunton	25	40.3	58.3	25.8	46.8
Worcester	117	39.4	67.9	18.5	61.1

Source: Registry of Vital Records and Statistics, MDPH, BHRSE, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

<sup>1</sup> Paternity acknowledgment: Voluntary self-acknowledgment by fathers or acknowledgment through legal action. These data reflect data collected in hospitals at time of birth only (see Glossary for further explanation).

<sup>2</sup> 25 communities with the greatest number of births to teens ages 15-19

<sup>3</sup> Behind Grade Level" is defined as two or more years behind the maximum expected age for a grade at the time of delivery (see Glossary for further explanation).

<sup>4</sup> Any amount of cigarette smoking by mother during pregnancy. Maternal smoking is self-reported by mothers, usually following the birth of their child, and as such these data should be interpreted cautiously. Smoking during pregnancy may be underreported, artificially lowering smoking prevalence.

*IV.*

*Birth Characteristics for  
All 351 MA Communities  
and the 27 Community  
Health Network Areas*





**Table 27.**  
**Number of Resident Births by Mother's Age for 351 Massachusetts**  
**Communities: 2000**

Number of Births				Number of Births			
Community	All Ages	< 18 Years	< 20 Years	Community	All Ages	< 18 Years	< 20 Years
Massachusetts	81,582	1,829	5,395				
Abington	214	4	9	Brookfield	25	2	4
Acton	247	1	1	Brookline	614	2	6
Acushnet	102	3	9	Buckland	14	0	1
Adams	93	1	9	Burlington	297	0	1
Agawam	285	3	9	Cambridge	1,085	10	27
Alford	3	0	0	Canton	265	0	2
Amesbury	194	3	12	Carlisle	47	0	0
Amherst	161	2	6	Carver	123	0	8
Andover	338	1	2	Charlemont	15	1	1
Aquinnah	5	0	0	Charlton	156	0	3
Arlington	541	1	6	Chatham	38	0	0
Ashburnham	49	0	1	Chelmsford	443	4	12
Ashby	34	1	2	Chelsea	682	34	91
Ashfield	21	0	1	Cheshire	39	1	2
Ashland	244	1	5	Chester	12	0	1
Athol	132	3	19	Chesterfield	15	0	1
Attleboro	621	19	47	Chicopee	605	16	59
Auburn	176	2	6	Chilmark	2	0	0
Avon	46	2	3	Clarksbury	9	0	0
Ayer	136	4	8	Clinton	173	4	14
Barnstable	481	10	30	Cohasset	87	0	1
Barre	68	1	2	Colrain	12	0	0
Becket	16	1	2	Concord	176	0	2
Bedford	168	0	0	Conway	11	0	0
Belchertown	171	3	5	Cummington	4	0	0
Bellingham	220	2	7	Dalton	57	3	5
Belmont	278	0	1	Danvers	235	0	6
Berkley	75	1	1	Dartmouth	264	4	18
Berlin	31	0	0	Dedham	301	1	3
Bernardston	16	0	1	Deerfield	43	0	0
Beverly	520	5	22	Dennis	115	1	9
Billerica	514	5	18	Dighton	65	0	1
Blackstone	104	2	5	Douglas	126	1	4
Blandford	8	1	1	Dover	58	0	0
Bolton	69	0	0	Dracut	375	3	16
Boston	8,079	299	805	Dudley	128	4	8
Bourne	247	1	9	Dunstable	45	0	1
Boxborough	61	0	0	Duxbury	189	1	4
Boxford	73	0	0	East Bridgewater	155	2	2
Boylston	41	0	0	East Brookfield	21	1	1
Braintree	417	1	10	East Longmeadow	154	1	6
Brewster	52	1	1	Eastham	39	0	1
Bridgewater	299	2	11	Easthampton	169	1	12
Brimfield	38	1	4	Easton	266	0	3
Brockton	1,559	70	219	Edgartown	40	0	1

**Table 27. (Cont.)**  
**Number of Resident Births by Mother's Age for 351 Massachusetts**  
**Communities: 2000**

Number of Births				Number of Births			
Community	All Ages	< 18 Years	< 20 Years	Community	All Ages	< 18 Years	< 20 Years
Egremont	6	0	0	Holyoke	663	53	138
Erving	18	0	0	Hopedale	84	1	1
Essex	36	0	1	Hopkinton	227	0	2
Everett	495	9	20	Hubbardston	59	1	1
Fairhaven	130	1	3	Hudson	250	3	9
Fall River	1,187	40	154	Hull	107	2	3
Falmouth	286	7	20	Huntington	22	0	0
Fitchburg	566	40	94	Ipswich	121	0	4
Florida	6	1	1	Kingston	178	2	3
Foxborough	230	2	3	Lakeville	130	4	11
Framingham	991	15	45	Lancaster	73	1	3
Franklin	523	0	3	Lanesborough	32	0	0
Freetown	85	0	0	Lawrence	1,416	95	284
Gardner	224	6	31	Lee	45	0	2
Georgetown	103	0	3	Leicester	117	3	8
Gill	11	0	0	Lenox	40	0	1
Gloucester	335	5	26	Leominster	589	27	64
Goshen	6	0	0	Leverett	10	0	1
Gosnold	1	0	0	Lexington	303	0	3
Grafton	212	1	5	Leyden	2	0	0
Granby	56	1	3	Lincoln	106	0	0
Granville	19	0	0	Littleton	135	1	1
Greenfield	204	6	22	Longmeadow	139	0	1
Groton	156	0	0	Lowell	1,761	91	251
Groveland	68	1	2	Ludlow	169	3	10
Grt Barrington	51	0	2	Lunenburg	111	1	3
Hadley	45	1	1	Lynn	1,446	56	194
Halifax	93	1	3	Lynnfield	126	0	0
Hamilton	102	0	1	Malden	823	9	26
Hampden	39	0	1	Manchester	45	0	0
Hancock	6	0	1	Mansfield	414	1	6
Hanover	156	0	2	Marblehead	240	0	0
Hanson	128	0	9	Marion	43	0	0
Hardwick	23	0	0	Marlborough	617	9	36
Harvard	44	0	0	Marshfield	357	3	7
Harwich	102	1	3	Mashpee	152	2	4
Hatfield	18	0	0	Mattapoissett	61	0	1
Haverhill	848	23	68	Maynard	174	2	4
Hawley	2	0	0	Medfield	151	0	1
Heath	10	0	1	Medford	605	3	11
Hingham	291	0	2	Medway	211	2	3
Hinsdale	10	0	1	Melrose	383	0	6
Holbrook	139	1	1	Mendon	61	0	1
Holden	167	2	4	Merrimac	78	0	0
Holland	23	1	2	Methuen	592	8	35
Holliston	199	0	1	Middleborough	251	4	14

**Table 27. (Cont.)**  
**Number of Resident Births by Mother's Age for 351 Massachusetts**  
**Communities: 2000**

Number of Births				Number of Births			
Community	All Ages	< 18 Years	< 20 Years	Community	All Ages	< 18 Years	< 20 Years
Middlefield	3	0	0	Peabody	539	4	20
Middleton	81	0	3	Pelham	9	0	0
Milford	375	5	20	Pembroke	275	1	5
Millbury	142	2	9	Pepperell	149	4	8
Millis	118	2	3	Peru	8	0	0
Millville	39	0	0	Petersham	11	0	2
Milton	312	4	5	Phillipston	16	2	2
Monroe	1	1	1	Pittsfield	484	17	58
Monson	98	4	10	Plainfield	5	0	0
Montague	96	4	11	Plainville	105	0	5
Monterey	9	0	2	Plymouth	677	12	23
Montgomery	12	0	1	Plympton	33	0	0
Mt Washington	2	0	0	Princeton	25	0	1
Nahant	33	0	0	Provincetown	4	0	0
Nantucket	141	2	6	Quincy	1,151	11	39
Natick	503	2	5	Randolph	445	3	14
Needham	401	0	0	Raynham	124	2	4
New Ashford	5	0	0	Reading	287	1	9
New Bedford	1,311	70	198	Rehoboth	103	1	3
New Braintree	6	0	0	Revere	628	9	35
New Marlborough	17	0	1	Richmond	10	0	0
New Salem	12	0	0	Rochester	43	0	1
Newbury	61	0	1	Rockland	230	4	19
Newburyport	203	5	9	Rockport	60	0	0
Newton	886	1	8	Rowe	5	0	0
Norfolk	129	0	0	Rowley	69	0	1
North Adams	141	13	31	Royalston	7	0	1
North Andover	370	1	1	Russell	14	1	2
North Attleboro	413	3	11	Rutland	110	1	3
North Brookfield	51	0	2	Salem	515	12	34
North Reading	202	1	1	Salisbury	98	6	13
Northampton	235	4	12	Sandisfield	5	0	0
Northborough	175	2	3	Sandwich	218	0	4
Northbridge	197	9	14	Saugus	286	2	7
Northfield	26	0	0	Savoy	6	0	1
Norton	275	5	16	Scituate	202	1	2
Norwell	120	0	2	Seekonk	135	2	7
Norwood	347	2	10	Sharon	213	2	3
Oak Bluffs	26	0	1	Sheffield	28	0	1
Oakham	18	0	0	Shelburne	21	0	2
Orange	81	5	11	Sherborn	52	0	0
Orleans	23	0	0	Shirley	64	3	4
Otis	10	0	1	Shrewsbury	462	1	5
Oxford	170	2	7	Shutesbury	18	0	0
Palmer	129	5	16	Somerset	138	2	9
Paxton	33	1	3	Somerville	928	6	47

**Table 27. (Cont.)**  
**Number of Resident Births by Mother's Age for 351 Massachusetts**  
**Communities: 2000**

Number of Births				Number of Births			
Community	All Ages	< 18 Years	< 20 Years	Community	All Ages	< 18 Years	< 20 Years
South Hadley	143	1	6	Watertown	388	2	6
Southampton	56	0	2	Wayland	180	0	0
Southborough	154	0	2	Webster	195	5	14
Southbridge	242	16	39	Wellesley	351	0	1
Southwick	113	2	8	Wellfleet	17	1	2
Spencer	139	4	13	Wendell	5	0	0
Springfield	2,503	221	477	Wenham	31	0	0
Sterling	94	1	2	West Boylston	59	1	2
Stockbridge	10	0	1	West Bridgewater	81	0	6
Stoneham	263	1	2	West Brookfield	30	0	3
Stoughton	320	4	12	West Newbury	47	0	0
Stow	88	0	0	West Springfield	291	5	23
Sturbridge	91	1	5	West Stockbridge	7	0	1
Sudbury	236	0	1	West Tisbury	32	0	0
Sunderland	33	0	2	Westborough	243	5	10
Sutton	123	1	4	Westfield	447	6	30
Swampscott	175	0	1	Westford	317	0	2
Swansea	139	1	6	Westhampton	14	0	0
Taunton	769	21	62	Westminster	77	1	2
Templeton	88	1	4	Weston	93	0	0
Tewksbury	391	1	8	Westport	126	1	6
Tisbury	37	1	3	Westwood	193	0	1
Tolland	4	0	0	Weymouth	757	8	19
Topsfield	69	0	0	Whately	10	0	0
Townsend	115	0	4	Whitman	195	1	6
Truro	14	0	0	Wilbraham	115	1	2
Tyngsborough	187	2	8	Williamsburg	22	0	0
Tyringham	2	0	0	Williamstown	46	0	0
Upton	112	0	3	Wilmington	318	1	2
Uxbridge	186	2	3	Winchendon	118	2	12
Wakefield	351	0	1	Winchester	298	0	1
Wales	20	0	1	Windsor	6	0	0
Walpole	303	1	4	Winthrop	171	1	7
Waltham	684	7	16	Woburn	485	5	19
Ware	109	1	9	Worcester	2,535	107	297
Wareham	225	8	20	Worthington	11	1	1
Warren	58	1	5	Wrentham	148	0	4
Warwick	9	1	1	Yarmouth	204	4	14
Washington	1	0	0				

Source: Registry of Vital Records and Statistics, MDPH, BSHRE, 2002.

All numbers based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

**Table 28.**  
**Number of Births by Mother's Age and Prenatal Care Characteristics**  
**27 Community Health Network Areas<sup>1</sup>: 2000**

	All Ages	Number of Births		Prenatal Care (< 20 Years)	
Community Health Network Areas (CHNA)	Births	< 18 Years	< 20 Years	Number Began in 1st Trimester	Number Paid by Public Funds <sup>2</sup>
Massachusetts	81,582	1,829	5,395	3,535	3,952
1 Community Health Network of Berkshire County	1,210	37	123	83	95
2 Upper Valley Health Web (Franklin County)	872	23	80	51	63
3 Partnership for Health in Hampshire Ctny (Gr. Northampton)	1,252	15	58	42	33
4 The Community Health Connection (Gr. Springfield)	3,923	244	557	335	450
5 Greater Southbridge Community Health Network	1,387	38	111	80	63
6 Community Partners for Health (Gr. Milford Area)	2,361	25	68	51	35
7 Community Health Partners of Greater Metro West	5,517	44	143	115	78
8 Community Wellness Coalition (Gr. Worcester)	3,944	120	339	211	253
9 Fitchburg/Gardner Community Health Network	3,269	99	263	176	178
10 Gr. Lowell Community Health Network	4,033	106	316	200	230
11 Gr. Lawrence Community Health Network	2,797	105	325	225	264
12 Gr. Haverhill Community Health Network	1,842	38	109	73	73
13 Gr. Beverly/Gloucester Community Health Network	1,319	10	54	37	36
14 North Shore Community Health Network	3,595	74	262	151	213
15 Gr. Woburn/Concord/Littleton Community Health Network	2,641	8	30	12	12
16 North Suburban Health Alliance (Medford/Malden/Melrose)	3,409	24	76	49	43
17 Gr. Cambridge/ Somerville Community Health Network	3,220	19	87	55	53
18 West Suburban Health Network (Newton/Waltham Area)	2,967	9	29	20	15
19 Alliance for Community Health (Boston/Chelsea/Revere/Winthrop)	10,174	345	944	636	749
20 Blue Hills Community Health Alliance (Gr. Quincy Area)	4,714	34	112	81	51
21 Four (For) Communities (Gr. Holyoke)	1,918	78	238	161	200
22 Gr. Brockton Community Health Network	3,274	86	272	168	198
23 South Shore Community Partners in Prevention (Gr. Plymouth)	2,439	24	83	58	44
24 Health & Education Response (Gr. Attleboro/Taunton)	3,375	63	183	125	121
25 Partners for a Healthier Community (Gr. Fall River Area)	1,590	44	175	112	139
26 Greater New Bedford Community Health Network	2,264	86	250	155	187
27 Cape and Islands Community Health Network	2,276	31	108	73	76

Source: Registry of Vital Records and Statistics, MDPH, BSHRE, 2002.

<sup>1</sup> While the CHNA number designations are no longer used, they are provided in this table to correspond with Community Health Network Area definition and city/town groupings found in the Appendix.

<sup>2</sup> Public: Mass Health (Medicaid), Medicare, Healthy Start, free care and other government programs (see Technical Notes).

**Table 29.**  
**Percent of Maternal Smoking during Pregnancy by Mother's Age,**  
**Ranked by Teen Smoking Rates,**  
**27 Community Health Network Areas<sup>1</sup>: 2000**

No.	Community Health Network Areas (CHNA)	Under 20 Years (%)	20 Years or Older (%)	All Ages (%)
	<b>Massachusetts</b>	19.0	9.1	9.7
13	Greater Beverly/Gloucester Community Health Network	44.4	8.6	10.1
1	Community Health Network of Berkshire County	43.1	20.0	22.3
12	Greater Haverhill Community Health Network	33.3	9.4	10.8
2	Upper Valley Health Web (Franklin County)	32.9	17.4	18.8
6	Community Partners for Health (Greater Milford Area)	30.9	7.2	7.8
23	South Shore Community Partners in Prevention	28.9	8.9	9.6
25	Partners for a Healthier Community (Gr. Fall River Area)	28.0	19.4	20.4
5	Greater Southbridge Community Health Network	27.9	17.3	18.2
24	Health and Education Response (Greater Attleboro/Taunton)	26.2	10.0	10.8
9	Fitchburg/Gardner Community Health Network	25.5	12.2	13.2
27	Cape and Islands Community Health Network	24.1	12.5	13.1
15	Greater Woburn/Concord/Littleton Community Health Network	23.3	4.0	4.3
17	Greater Cambridge/ Somerville Community Health Network	23.3	3.6	4.1
10	Greater Lowell Community Health Network	22.3	10.4	11.3
20	Blue Hills Community Health Alliance (Greater Quincy Area)	20.7	5.1	5.5
8	Community Wellness Coalition (Greater Worcester Area)	20.1	11.9	12.6
4	The Community Health Connection (Greater Springfield)	19.9	15.9	16.5
26	Greater New Bedford Community Health Network	19.8	16.7	17.0
21	Four (For) Communities (Greater Holyoke)	18.5	18.4	18.4
16	North Suburban Health Alliance (Medford/ Malden/Melrose)	18.4	6.6	6.8
7	Community Health Partners of Greater Metro West	17.5	4.2	4.6
14	North Shore Community Health Network	16.8	10.0	10.5
3	Partnership for Health in Hampshire County	15.8	10.6	10.8
22	Greater Brockton Community Health Network	15.4	11.3	11.6
18	West Suburban Health Network (Newton/Waltham Area)	13.8	3.2	3.3
11	Greater Lawrence Community Health Network	7.4	6.3	6.4
19	Alliance for Community Health (Boston/Chelsea/Revere/Winthrop)	6.8	5.7	5.8

Source: Registry of Vital Records and Statistics, MDPH, BSHRE, 2002.

All percentages are calculated based on only those births with known values for the characteristic(s) of interest, unless otherwise stated.

<sup>1</sup> While the CHNA number designations are no longer used, they are provided in this table to correspond with Community Health Network Area definition and city/town groupings found in the Appendix.

## *Appendix*





# *Technical Notes*

## **SPECIAL NOTES ON THIS YEAR'S PUBLICATION**

Winchester Hospital did not collect and report a subset of data on approximately half of the births (approx. 1,180) occurring at Winchester Hospital in 2000. This affects less than 1.0% of births to women under 20. This subset of data included the following information: infant birthweight, infant gestational age, parity, method of delivery, number of prenatal care visits, adequacy of prenatal care, source of prenatal care payment, and breastfeeding. The omission of this information from the Massachusetts birth file resulted in higher percentages of missing data for these indicators, including among mothers over 20 years. *See Technical Notes below for more detail on missing data.*

### **1. POPULATION ESTIMATES**

The Massachusetts Department of Public Health (MDPH) Population 2000 file is a preliminary file of 2000 population estimates for Massachusetts. It is based upon the U.S. Census 2000 SF1 file (released June, 2001) for Massachusetts, which contains data on population and housing for the 351 towns, 14 counties, and the state overall.

The MDPH file was derived from the Census 2000 file by allocating persons who indicated "some other race" or multiple races to the conventional MDPH race categories: "White", "Black or African American", "Asian", and "Native American". In Census 2000, unlike previous censuses, respondents were able to classify themselves by Hispanic ethnicity and by single or multi-race categories, including "some other race." In order to make the MDPH population 2000 file consistent with previous years' population files, the MDPH Population 2000 file maintains the prior race and Hispanic categories. The MDPH Population 2000 file used in this report is preliminary. A final file will be released later this year.

In this publication, birth rates for 1999 are based on the MDPH 1999 Population file, which is a linear interpolation between the preliminary draft Population 2000 file and the 1998 population estimates produced by the Massachusetts Institute for Social and Economic Research (MISER). All 1999 population-based rates in this year's report have been recalculated using the MDPH 1999 Population file. MISER is the source of population estimates used as denominators in this report to calculate population-based teen birth rates from 1991 through 1998. Teen birth rates for 1999 have been recalculated in *Adolescent Births 2000* using the MDPH 1999 Population estimates as denominators. Birth rates for 1990 are based upon the U.S. Census 1990 SF1 file.

## **2. DATA CAUTIONS**

- Limitations of small numbers: In cases where there are small numbers of teen births, especially at the city/town level and by race/ethnicity or age, small changes in the numbers from year to year will produce large changes in percentages, making the differences appear more important than they are in reality. Whether or not the small numbers are suppressed, rates and trends based upon small numbers should be interpreted cautiously.
- Differences with previously published data: Numbers and rates in this publication may differ from those contained in previous reports due to updates of birth and death certificate files, differences in the formulas used in calculating rates, and/or the use of updated population estimates.
- Missing data: Unless otherwise stated, percentages are based on the number of births that had *known* information regarding a demographic or birth characteristic. Data with unknown values are excluded from calculations of percentages and rates.
- Self-reported data: Many items used in this publication, such as maternal smoking and type of health insurance coverage, are self-reported. Self-reported data are subject to the usual limitations of this type of information.
- Calculation of birth rates: Birth rates (number of births per 1,000 women) are calculated using counts of the resident population of Massachusetts. Because the Census is taken only once every ten years, the annual numbers of residents in each city/town and in the state for non-Census years are estimates, not actual counts. Therefore, the numbers of resident women may be underestimated (resulting in inflated birth rates), or overestimated (resulting in lower birth rates). Because population numbers are updated periodically, teen birth rates in this report may differ from previous reports.
- Calculation of infant mortality rates (IMR) for teenage mothers: Death certificates record only the age of the decedent, not that of the mother. To identify which infants who died before their first birthday had a teenage or adult mother, it is necessary to link the infant death certificates to their birth certificates since the mother's age is recorded on the birth certificate. Each year, the Registry of Vital Records and Statistics creates such a file, called the Linked Birth/Infant Death file. All births in a calendar year are linked to all infant deaths occurring within one year of the date of birth, which may be in the same calendar year as the year of birth or in the following year. For example, if an infant is born on June 30, 1999 and dies on March 1, 2000, that infant would be included in the 1999 linked file because he/she was born in 1999 and died before reaching one year of age. As a result, the infant mortality rate for infants born in 2000 to women under the age of 20 will not be available until the 2000 Linked Birth/Infant Death file is complete. Therefore, the 1999 maternal age-specific infant mortality rate is the most recent available and is included in this report. The infant mortality data for infants born in 1999 is based on preliminary data. Final data and infant mortality rates will appear in next year's report.

### *Technical Notes (Cont.)*

Since infant mortality rates in this report are calculated using data from the Linked Birth/Infant death file, they are not comparable to the rates published in *Massachusetts: Births*, which uses the standard method to calculate IMRs (number of infant deaths in a calendar year per 1,000 live births delivered in the same year).

- Change in the calculation of expected educational attainment: Prior to 1997, the expected level of educational attainment (see *Glossary* for further explanation) was calculated differently for US-born and foreign-born teenage mothers. In this report, the same age-for-grade cutoffs were used regardless of maternal place of birth.
- Change in gestational age categories: Beginning with the 1997 report, full-term infants were defined as having been born between 37 and 42 completed weeks of gestation. Prior to 1997, full-term infants were defined as having gestational ages between 37 and 41 completed weeks of gestation. Therefore, caution should be used when comparing this year's gestational data with data prior to 1997.
- Change in categorization of prenatal care source of payment: Beginning with the 1997 report, free care was included in public source of payment for prenatal care. Prior to 1997, free care was included in other sources of payment. Therefore, caution should be used when comparing this year's prenatal care source of payment data with data prior to 1997.
- Community Health Network Areas (CHNAs): The data published in this report reflect the definitions of CHNAs instituted in January 1997. (See *Glossary* for further definition.)

### **3. CHANGES IN THE COLLECTION OF RACE AND ETHNICITY INFORMATION:**

Prior to 1989, the race/ethnicity of an infant was assigned by combining information on the race/ethnicity of the mother and the race/ethnicity of the father. Since 1989, Massachusetts has followed the recommendation of the National Center for Health Statistics of classifying births according to the self-reported race/ethnicity of the mother. Therefore, beginning in 1989, the race/ethnicity of an infant is identical to the self-reported race/ethnicity of the infant's mother.

Beginning in 1986, an identifier for Hispanic ethnicity was added to the birth certificate; in 1989, an identifier for Hispanic ethnicity was added to the death certificate. Prior to these changes, most Hispanics were included with whites and it was not possible to accurately calculate Hispanic-specific rates of natality and mortality.

Beginning in 1996, the birth information on detailed ethnicity/ancestry groups has been greatly expanded. The assignment of race and ethnicity categories has been slightly modified to more accurately reflect mothers' actual responses. Self-reported information is used for all races and ethnicity groups (mothers who identify themselves as Hispanic are classified as Hispanic regardless of any additional race information they provide). Race data has been separated from ethnicity/ancestry data for the reader's convenience. Please note that the detailed ethnicity groups may not sum to the broad race categories: for example, women who selected detailed

### *Technical Notes (Cont.)*

ethnicity groups such as Chinese or Japanese may also identify with any race group – Asian, white, black, or other.

## **4. CHANGES TO MASSACHUSETTS CERTIFICATE OF LIVE BIRTH**

In 1996, Massachusetts implemented a major revision to the birth certificate form and, at the same time, installed in Massachusetts' maternity hospitals a new Electronic Birth Certificate (EBC) system. As a result, Massachusetts natality data from 1996 onward will afford public health researchers, program planners, the health care community, and the public with vastly expanded information that more accurately reflects their needs and the times. The transition period affected several elements of the 1996 report onward. As a result, not all elements can be compared precisely with data published in editions of this report prior to 1996.

## **5. ADEQUACY OF PRENATAL CARE**

Adequacy of prenatal care is measured using the Kessner Index, which is based on timing of entry into prenatal care and number of visits. (See *Glossary* for further details). It is not a measure of quality of prenatal care. There have been two significant changes in the calculation of the Adequacy of Prenatal Care. Until 1996, the month of the first prenatal care visit was recorded on the birth certificate. Starting in 1996, the new birth certificate records the exact date of the first visit. This change reduced the estimated number of women receiving prenatal care in the first trimester.

Beginning in 1996, the collection of data for calculation of the Kessner Index differed from previous years. From 1986 to 1995, data elements for use in calculating the adequacy index were as follows: Number of Prenatal Visits (NPV), adjusted by birthweight for premature infants, and Month of Pregnancy that Prenatal Care Began (MPPCB), coded as 1-9. Hospitals were required to calculate the MPPCB from data available in medical and prenatal records. Since 1996, the data elements for use in calculating the adequacy index are still NPV and MPPCB (1-9). However, currently NPV is adjusted by the clinical estimate of gestation for premature infants rather than by birthweight. Secondly, rather than have individual hospitals make determinations of MPPCB, the new birth certificate asks hospitals to report the precise Date of First Prenatal Care Visit (DFPCV). This increases the consistency of data collection across facilities and yields a more standardized calculation of MPPCB. Rather unexpectedly, MPPCB in 1996 showed a marked decline in first trimester visits when DFPCV was used to determine the month as opposed to hospitals reporting just the month. When comparing the adequacy index for 1995 through 1997, there is an almost universal decline in state and hospital adequacy rates. This decline is unlikely to reflect a significant actual decline, but rather a data adjustment due to more accurate data collection that began in 1996 and 1997.

The second important change related to adequacy of prenatal care took place in 1998. Adjustments in the calculation of Adequacy of Care were made in order to make Massachusetts data more comparable to the calculations recommended by the National Center for Health

### *Technical Notes (Cont.)*

Statistics. As a result of both changes, caution should be used when assessing trends in adequacy of care.

## **6. BIRTHPLACE OF MOTHERS**

In 1999, Puerto Rico and U.S. Territories were part of the “U.S. Born” category. Prior to 1999, women born in Puerto Rico, the U.S. Virgin Islands, and Guam were included in the “Other” category. For this report, women born in the 50 U.S. states or the District of Columbia are designated as ***U.S. Born***. Women born in U.S. possessions or protectorates, including Puerto Rico, the U.S. Virgin Islands, and Guam are grouped in the ***Puerto Rico/U.S. Territories*** category. All other women are considered ***Non-U.S.-Born***.

# Glossary

**Adequacy of Prenatal Care:** The Index of Adequacy of Prenatal Care (based on the Kessner Index) has five categories (adequate, intermediate, inadequate, no prenatal care, and unknown), based on the trimester in which prenatal care began and the number of prenatal visits. The classification is adjusted for gestational age to allow for proper classification of premature infants. (*See Technical Appendix.*) The general classification scheme for full-term infants is as follows:

Category	Trimester Care Began	Number of Visits
Adequate	1	9 or more
Intermediate	1	5-8
	2	5 or more
Inadequate	1	1-4
	2	1-4
	3	1 or more
No prenatal care	--	0
Unknown	unknown	unknown

**Birth Rate:** See Teen Birth Rate.

**Birthweight:** The weight of an infant recorded at the time of delivery. It may be recorded in either pounds/ounces or grams. If recorded in pounds/ounces, it is converted to grams for use in this report.

1 pound = 453.6 grams

1,000 grams = 2 pounds and 3 ounces

## Birthweight Categories:

Normal Birthweight (NBW):	An infant's weight of 2,500 grams (5.5 pounds) or more
Low Birthweight (LBW):	An infant's weight of less than 2,500 grams (5.5 pounds)
Very Low Birthweight (VLBW):	An infant's weight of less than 1,500 grams (3.3 pounds)

**Community Health Network Area (CHNA):** The Department of Public Health, in collaboration with health service providers, coalition members, and interested citizens, has divided the state into 27 areas for community health planning. Coalitions in each CHNA address the health needs of the community through development of strategies, monitoring of outcomes and the progress of the strategies and responses to those health needs. A CHNA is defined as an aggregation of cities and towns. The table at the end of the Appendix provides a list of the 351 cities and towns with the corresponding CHNA number.

**Education:** Education is self-reported on the birth certificate by the mother and indicates the highest grade or total number of years of schooling she has completed.

**Ethnicity:** Mother's ethnicity is self-reported on the birth certificate.

**Expected Educational Attainment:** The maximum expected age of a student in a particular school grade. Teen mothers were classified as being at least one grade behind if they were two or more years older than the maximum expected age for the reported grade level. For example, if a teen is 16 years old and reports she has completed eighth grade, then she is at least one year behind the expected age for that grade. The following age-for-grade cutoffs were used:

## ***Glossary (Cont.)***

<u>Grade</u>	<u>Maximum Expected Age</u>
6th	12
7th	13
8th	14
9th	15
10th	16
11th	17
12th	18

**Gestational Age:** The duration of pregnancy measured by number of completed weeks gestation. In this publication, the clinical estimate of gestational age has been used for analysis. Clinical gestational age is determined by the attendant at birth or a physician providing postnatal care to the newborn and is reported on the birth certificate. A normal gestational age is defined as delivery between the completion of the 37th and the 42nd week of pregnancy. A preterm delivery is one that occurs at less than 37 completed weeks gestation.

**Healthy Start:** Healthy Start is a Massachusetts-funded program providing services and financing for prenatal care to low-income (up to 200% of the poverty level in 1997) pregnant women who lack health insurance and do not qualify for MassHealth (Medicaid).

**Infant Mortality:** See Mortality Categories.

**Infant Mortality Rate (IMR):** See Mortality Rate Categories.

**Live Birth:** A live birth is defined as any infant who breathes or shows any other evidence of life after delivery (such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles), regardless of duration of gestation or birthweight. All figures and tables in this report, showing Massachusetts data, are based on live births to Massachusetts residents (see Resident Birth).

**Low Birthweight (LBW):** See Birthweight Categories.

### **Mortality Categories:**

**Infant Mortality:** The death of an infant under 1 year of age ( $\leq 364$  days old).

**Neonatal Mortality:** The death of an infant less than 28 days old.

**Post Neonatal Mortality:** The death of an infant between 28 and 364 days after birth.

### **Mortality Rate Categories:**

**Infant Mortality Rate (IMR):** The death rate among infants less than one year old per 1,000 live births.

**Neonatal Mortality Rate (NMR):** The death rate among newborns less than 28 days old per 1,000 live births.

**Post Neonatal Mortality Rate (PNMR):** The death rate among infants 28-364 days old per 1,000 live births.

**Mother's Age:** Mother's age at delivery is computed from her date of birth and the date of delivery.

**Multiparous:** A multiparous mother is one who has had at least one prior live birth.

**Neonatal Mortality:** See Mortality Categories.

**Neonatal Mortality Rate (NMR):** See Mortality Rate Categories.

**Normal Birthweight (NBW):** See Birthweight Categories.



## ***Glossary (Cont.)***

**Parity:** The number of live infants ever born to the mother. Parity includes all previous live births as well as the infant named on the birth certificate.

**Paternity Acknowledgement:** The process by which the paternity of an infant is legally established when the parents are unmarried. As part of the birth registration process, unmarried parents sign an acknowledgement form and their signatures are notarized. The father's information is then added to the child's birth certificate. Paternity can also be acknowledged at a town clerk's office after the mother and child have been discharged from the hospital. Paternity may be established through legal action or through voluntary acknowledgement in the case of unmarried couples; when a couple is married, the husband is legally considered the infant's father. *Paternity acknowledgement data in this report reflect acknowledgments made in hospitals at the time of birth only.*

**Postneonatal Mortality:** See Mortality Categories.

**Post Neonatal Mortality Rate (PNMR):** See Mortality Rate Categories.

**Prenatal Care Payment Source:** Prenatal care payment source is self-reported by the mother. Four groupings are used in this report:

- Private: Commercial indemnity plan, commercial managed care (HMO, PPO, IPP, IPA, and other) other private insurance.
- Public: Government programs including Commonhealth, MassHealth (Medicaid), Healthy Start, Medicare, free care, and other government sources.
- Other: Any other payment source not included in the previous categories, including Worker's Compensation.

**Race/Hispanic Ethnicity:** Mother's race and Hispanic ethnicity are self-reported. All respondents indicating Hispanic ethnicity will be designated Hispanic regardless of their response to questions concerning racial identity.

**Resident Birth:** The birth of an infant whose mother reports her usual place of residence as Massachusetts. In Massachusetts, a resident is a person with a permanent address in one of the 351 cities or towns. Massachusetts resident births include all births that occur among residents of the Commonwealth whether they occur in Massachusetts or elsewhere.

**Teen Birth Rate:** The number of children born among females ages 15 to 19 divided by the population of females in that age group, multiplied by 1,000.

$$\text{Teen birth rate} = \frac{\text{Number of births to females ages 15-19 years old}}{\text{Number of females ages 15-19 years old in the population}} \times 1,000$$

**Total Rate of Change:** The total rate of change is calculated as follows:

$$\frac{P_n - P_o}{P_o} \times 100$$

Where  $P_n$  = rate during late time period       $P_o$  = rate during earlier time period

**Very Low Birthweight (VLBW):** See Birthweight Categories.

## 2000 Population Estimates of Females Aged 15 to 19 Years Living in the 25 Massachusetts Communities with the Highest Number of Teen Births in 2000

<u><b>Community</b></u>	<u><b>Estimated Number of Females, Aged 15-19 years</b></u>
<i>Massachusetts</i>	205,277
Attleboro	1,151
Boston	22,240
Brockton	3,304
Chelsea	1,102
Chicopee	1,809
Fall River	2,915
Fitchburg	1,519
Framingham	1,925
Haverhill	1,793
Holyoke	1,513
Lawrence	2,847
Leominster	1,220
Lowell	3,913
Lynn	2,990
Marlborough	827
Methuen	1,264
New Bedford	2,978
Pittsfield	1,361
Quincy	1,950
Revere	1,215
Somerville	2,087
Southbridge	556
Springfield	6,037
Taunton	1,652
Worcester	6,918

Source: 2000 birth rates are calculated using MDPH 2000 population estimates, based on U.S. Census 2000 population counts.

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City/Town	County	CHNA	City/Town	County	CHNA	City/Town	County	CHNA
Abington	Plymouth	22	Dartmouth	Bristol	26	Huntington	Hampshire	21
Acton	Middlesex	15	Dedham	Norfolk	18	Ipswich	Essex	13
Acushnet	Bristol	26	Deerfield	Franklin	2	Kingston	Plymouth	23
Adams	Berkshire	1	Dennis	Barnstable	27	Lakeville	Plymouth	24
Agawam	Hampden	4	Dighton	Bristol	24	Lancaster	Worcester	9
Alford	Berkshire	1	Douglas	Worcester	6	Lanesborough	Berkshire	1
Amesbury	Essex	12	Dover	Norfolk	18	Lawrence	Essex	11
Amherst	Hampshire	3	Dracut	Middlesex	10	Lee	Berkshire	1
Andover	Essex	11	Dudley	Worcester	5	Leicester	Worcester	8
Arlington	Middlesex	17	Dunstable	Middlesex	10	Lenox	Berkshire	1
Ashburnham	Worcester	9	Duxbury	Plymouth	23	Leominster	Worcester	9
Ashby	Middlesex	9	East Bridgewater	Plymouth	22	Leverett	Franklin	2
Ashfield	Franklin	2	East Brookfield	Worcester	5	Lexington	Middlesex	15
Ashland	Middlesex	7	East Longmeadow	Hampden	4	Leyden	Franklin	2
Athol	Worcester	2	Eastham	Barnstable	27	Lincoln	Middlesex	15
Attleboro	Bristol	24	Easthampton	Hampshire	3	Littleton	Middlesex	15
Auburn	Worcester	8	Easton	Bristol	22	Longmeadow	Hampden	4
Avon	Norfolk	22	Edgartown	Dukes	27	Lowell	Middlesex	10
Ayer	Middlesex	9	Egremont	Berkshire	1	Ludlow	Hampden	21
Barnstable	Barnstable	27	Erving	Franklin	2	Lunenburg	Worcester	9
Barre	Worcester	9	Essex	Essex	13	Lynn	Essex	14
Becket	Berkshire	1	Everett	Middlesex	16	Lynnfield	Essex	14
Bedford	Middlesex	15	Fairhaven	Bristol	26	Malden	Middlesex	16
Belchertown	Hampshire	3	Fall River	Bristol	25	Manchester	Essex	13
Bellingham	Norfolk	6	Falmouth	Barnstable	27	Mansfield	Bristol	24
Belmont	Middlesex	17	Fitchburg	Worcester	9	Marblehead	Essex	14
Berkley	Bristol	24	Florida	Berkshire	1	Marion	Plymouth	26
Berlin	Worcester	9	Foxborough	Norfolk	7	Marlborough	Middlesex	7
Bernardston	Franklin	2	Framingham	Middlesex	7	Marshfield	Plymouth	23
Beverly	Essex	13	Franklin	Norfolk	6	Mashpee	Barnstable	27
Billerica	Middlesex	10	Freetown	Bristol	26	Mattapoisett	Plymouth	26
Blackstone	Worcester	6	Gardner	Worcester	9	Maynard	Middlesex	7
Blandford	Hampden	4	Gay Head	Dukes	27	Medfield	Norfolk	7
Bolton	Worcester	9	Georgetown	Essex	12	Medford	Middlesex	16
Boston	Suffolk	19	Gill	Franklin	2	Medway	Norfolk	6
Bourne	Barnstable	27	Gloucester	Essex	13	Melrose	Middlesex	16
Boxborough	Middlesex	15	Goshen	Hampshire	3	Mendon	Worcester	6
Boxford	Essex	12	Gosnold	Dukes	27	Merrimac	Essex	12
Boylston	Worcester	8	Grafton	Worcester	8	Methuen	Essex	11
Braintree	Norfolk	20	Granby	Hampshire	3	Middleborough	Plymouth	24
Brewster	Barnstable	27	Granville	Hampden	4	Middlefield	Hampshire	3
Bridgewater	Plymouth	22	Great Barrington	Berkshire	1	Middleton	Essex	11
Brimfield	Hampden	5	Greenfield	Franklin	2	Milford	Worcester	6
Brockton	Plymouth	22	Groton	Middlesex	9	Millbury	Worcester	8
Brookfield	Worcester	5	Groveland	Essex	12	Millis	Norfolk	7
Brookline	Norfolk	19	Hadley	Hampshire	3	Millville	Worcester	6
Buckland	Franklin	2	Halifax	Plymouth	23	Milton	Norfolk	20
Burlington	Middlesex	15	Hamilton	Essex	13	Monroe	Franklin	2
Cambridge	Middlesex	17	Hampden	Hampden	4	Monson	Hampden	4
Canton	Norfolk	20	Hancock	Berkshire	1	Montague	Franklin	2
Carlisle	Middlesex	15	Hanover	Plymouth	23	Monterey	Berkshire	1
Carver	Plymouth	23	Hanson	Plymouth	23	Montgomery	Hampden	4
Charlemont	Franklin	2	Hardwick	Worcester	9	Mt. Washington	Berkshire	1
Charlton	Worcester	5	Harvard	Worcester	9	Nahant	Essex	14
Chatham	Barnstable	27	Harwich	Barnstable	27	Nantucket	Nantucket	27
Chelmsford	Middlesex	10	Hatfield	Hampshire	3	Natick	Middlesex	7
Chelsea	Suffolk	19	Haverhill	Essex	12	Needham	Norfolk	18
Cheshire	Berkshire	1	Hawley	Franklin	2	New Ashford	Berkshire	1
Chester	Hampden	21	Heath	Franklin	2	New Bedford	Bristol	26
Chesterfield	Hampshire	3	Hingham	Plymouth	20	New Braintree	Worcester	9
Chicopee	Hampden	21	Hinsdale	Berkshire	1	New Marlborough	Berkshire	1
Chilmark	Dukes	27	Holbrook	Norfolk	22	New Salem	Franklin	2
Clarksburg	Berkshire	1	Holden	Worcester	8	Newbury	Essex	12
Clinton	Worcester	9	Holland	Hampden	5	Newburyport	Essex	12
Cohasset	Norfolk	20	Holliston	Middlesex	7	Newton	Middlesex	18
Colrain	Franklin	2	Holyoke	Hampden	21	Norfolk	Norfolk	7
Concord	Middlesex	15	Hopedale	Worcester	6	North Adams	Berkshire	1
Conway	Franklin	2	Hopkinton	Middlesex	7	North Andover	Essex	11
Cummington	Hampshire	3	Hubbardston	Worcester	9	N. Attleborough	Bristol	24
Dalton	Berkshire	1	Hudson	Middlesex	7	North Brookfield	Worcester	5
Danvers	Essex	14	Hull	Plymouth	20	North Reading	Middlesex	14

City/Town	County	CHNA	City/Town	County	CHNA
Northampton	Hampshire	3	Stoughton	Norfolk	22
Northborough	Worcester	7	Stow	Middlesex	7
Northbridge	Worcester	6	Sturbridge	Worcester	5
Northfield	Franklin	2	Sudbury	Middlesex	7
Norton	Bristol	24	Sunderland	Franklin	2
Norwell	Plymouth	20	Sutton	Worcester	6
Norwood	Norfolk	20	Swampscott	Essex	14
Oak Bluffs	Dukes	27	Swansea	Bristol	25
Oakham	Worcester	9	Taunton	Bristol	24
Orange	Franklin	2	Templeton	Worcester	9
Orleans	Barnstable	27	Tewksbury	Middlesex	10
Otis	Berkshire	1	Tisbury	Dukes	27
Oxford	Worcester	5	Tolland	Hampden	4
Palmer	Hampden	4	Topsfield	Essex	13
Paxton	Worcester	8	Townsend	Middlesex	9
Peabody	Essex	14	Truro	Barnstable	27
Pelham	Hampshire	3	Tyngsborough	Middlesex	10
Pembroke	Plymouth	23	Tyringham	Berkshire	1
Pepperell	Middlesex	9	Upton	Worcester	6
Peru	Berkshire	1	Uxbridge	Worcester	6
Petersham	Worcester	2	Wakefield	Middlesex	14
Phillipston	Worcester	2	Wales	Hampden	5
Pittsfield	Berkshire	1	Walpole	Norfolk	7
Plainfield	Hampshire	3	Waltham	Middlesex	18
Plainville	Norfolk	7	Ware	Hampshire	3
Plymouth	Plymouth	23	Wareham	Plymouth	26
Plympton	Plymouth	23	Warren	Worcester	5
Princeton	Worcester	9	Warwick	Franklin	2
Provincetown	Barnstable	27	Washington	Berkshire	1
Quincy	Norfolk	20	Watertown	Middlesex	17
Randolph	Norfolk	20	Wayland	Middlesex	7
Raynham	Bristol	24	Webster	Worcester	5
Reading	Middlesex	14	Wellesley	Norfolk	18
Rehoboth	Bristol	24	Wellfleet	Barnstable	27
Revere	Suffolk	19	Wendell	Franklin	2
Richmond	Berkshire	1	Wenham	Essex	13
Rochester	Plymouth	26	West Boylston	Worcester	8
Rockland	Plymouth	23	West Bridgewater	Plymouth	22
Rockport	Essex	13	West Brookfield	Worcester	5
Rowe	Franklin	2	West Newbury	Essex	12
Rowley	Essex	12	West Springfield	Hampden	4
Royalston	Worcester	2	West Stockbridge	Berkshire	1
Russell	Hampden	4	West Tisbury	Dukes	27
Rutland	Worcester	9	Westborough	Worcester	7
Salem	Essex	14	Westfield	Hampden	21
Salisbury	Essex	12	Westford	Middlesex	10
Sandisfield	Berkshire	1	Westhampton	Hampshire	3
Sandwich	Barnstable	27	Westminster	Worcester	9
Saugus	Essex	14	Weston	Middlesex	18
Savoy	Berkshire	1	Westport	Bristol	25
Scituate	Plymouth	20	Westwood	Norfolk	18
Seekonk	Bristol	24	Weymouth	Norfolk	20
Sharon	Norfolk	20	Whately	Franklin	2
Sheffield	Berkshire	1	Whitman	Plymouth	22
Shelburne	Franklin	2	Wilbraham	Hampden	4
Sherborn	Middlesex	7	Williamsburg	Hampshire	3
Shirley	Middlesex	9	Williamstown	Berkshire	1
Shrewsbury	Worcester	8	Wilmington	Middlesex	15
Shutesbury	Franklin	2	Winchendon	Worcester	9
Somerset	Bristol	25	Winchester	Middlesex	15
Somerville	Middlesex	17	Windsor	Berkshire	1
South Hadley	Hampshire	3	Winthrop	Suffolk	19
Southampton	Hampshire	3	Woburn	Middlesex	15
Southborough	Worcester	7	Worcester	Worcester	8
Southbridge	Worcester	5	Worthington	Hampshire	3
Southwick	Hampden	4	Wrentham	Norfolk	7
Spencer	Worcester	5	Yarmouth	Barnstable	27
Springfield	Hampden	4			
Sterling	Worcester	9			
Stockbridge	Berkshire	1			
Stoneham	Middlesex	14			

#### Community Health Network Areas

- 1 Community Health Network of Berkshire
- 2 Upper Valley Health Web (Franklin County)
- 3 Partnership for Health in Hampshire County (Greater Northampton Area)
- 4 The Community Health Connection (Greater Springfield)
- 5 Greater Southbridge Community Health Network
- 6 Community Partners for Health (Greater Milford Area)
- 7 CHN of Greater Metro West (Greater Framingham Area)
- 8 Community Wellness Coalition (Greater Worcester)
- 9 Fitchburg/Gardner Community Health Network
- 10 Greater Lowell Community Health Network
- 11 Greater Lawrence Community Health Network
- 12 Greater Haverhill Community Health Network
- 13 Greater Beverly/Gloucester CHN
- 14 North Shore Community Health Network
- 15 Greater Woburn/Concord/Littleton CHN
- 16 North Suburban Health Alliance (Malden/Medford/Melrose Area)
- 17 Greater Cambridge/Somerville CHN
- 18 West Suburban Health Network (Newton/Waltham)
- 19 Alliance for Community Health (City of Boston/Chelsea/Revere/Winthrop Area)
- 20 Blue Hills Community Health Alliance (Greater Quincy Area)
- 21 Four (For) Communities (Greater Holyoke)
- 22 Greater Brockton Community Health Network
- 23 South Shore Community Partners in Prevention (Greater Plymouth Area)
- 24 Health & Education Response (Greater Attleboro/Taunton Area)
- 25 Partners for a Healthier Community (Greater Fall River)
- 26 Greater New Bedford Community Health Network
- 27 Cape and Islands Community Health Network